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IN THE SUPERIOR COURT OF THE STATE OF ARIZONA  
FOR THE COUNTY OF YAVAPAI

2011 NOV 23 AM 9:02

SANDRA K MARKHAM, CLERK

BY: \_\_\_\_\_

*Margeline Hanchman*

STATE OF ARIZONA, )  
 )  
Plaintiff, )  
 )  
vs. )  
 )  
JAMES ARTHUR RAY, )  
 )  
Defendant. )  
\_\_\_\_\_ )

Case No. V1300CR201080049

REPORTER'S TRANSCRIPT OF PROCEEDINGS  
BEFORE THE HONORABLE WARREN R. DARROW  
TRIAL DAY FORTY-THREE  
MAY 10, 2011  
Camp Verde, Arizona

**ORIGINAL**

REPORTED BY  
MINA G. HUNT  
AZ CR NO. 50619  
CA CSR NO. 8335

1 IN THE SUPERIOR COURT OF THE STATE OF ARIZONA  
2 FOR THE COUNTY OF YAVAPAI  
3  
4 STATE OF ARIZONA, )  
5 Plaintiff, )  
6 vs. ) Case No. V1300CR201080049  
7 JAMES ARTHUR RAY, )  
8 Defendant. )  
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4 Proceedings had before the Honorable  
1 WARREN R. DARROW, Judge, taken on Tuesday, May 10,  
2 2011, at Yavapai County Superior Court, Division  
3 Pro Tem B, 2840 North Commonwealth Drive,  
4 Camp Verde, Arizona, before Mina G. Hunt, Certified  
5 Reporter within and for the State of Arizona.  
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## PROCEEDINGS

(Proceedings continued outside presence of jury.)

THE COURT: The record will show the presence of Mr. Ray, represented by Ms. Do, Mr. Li and Mr. Kelly. The state is present represented by Ms. Polk and Mr. Hughes.

There are three legal matters pending. Primarily the length of the trial, 403 concerns, the question of David Kent's testimony, and the question of Mr. Sundling's testimony.

And did anybody want to be heard on any of those issues?

MS. POLK: Your Honor, good morning.

THE COURT: Good morning.

MS. POLK: I want to be heard on the issue of Doug Sundling, first of all, because I think that will take care of one of the matters fairly quickly. It does relate to the state's concern about the length of the trial and our ability to finish within the remaining time allotted.

We have reviewed our witness list. We have made some decisions to significantly narrow the remaining witnesses. And one of the witnesses that the state will withdraw at this point is Doug

Sundling. We would like to reserve the right to recall him in rebuttal.

But, also, for the Court's information and purposes of this discussion, the state will not call Steve Pace. The Court had already made a preliminary ruling on him anyway. But we won't attempt to call him.

THE COURT: It was not barring his testimony. It raised foundational thoughts.

MS. POLK: And I understand. I appreciate that. And at -- at this time in the state's case in chief because of this issue of time, these are the witnesses that we have made the -- the decision at this time not to call.

Steve Pace is one of them. Doug Sundling is another. Rick Ross is another. And we also at this time do not intend to call family members. We had originally intended to call -- call them.

There are a number of participants we decided not to call, a number of law enforcement officers. We had listed medical doctors. In light of all the testimony that's come in, we don't feel it's necessary for us to call any additional doctors.

To cut to the chase, Your Honor, we have

narrowed the list down to 11. I think rather than telling the Court -- well, we're not going to call former employees, for example. But at this point we have it down to 11.

But anyway, the issue of Doug Sundling, we are not going to call him in our case in chief.

THE COURT: Okay.

MR. KELLY: And, Judge, if I may address just the length of trial. We believe we probably need between a week to a week and a half to present the defense case.

THE COURT: Four to six days, then?

MR. KELLY: Yes, sir. And obviously that excludes any time allotted by the Court for closing arguments and deliberations. If the trial were to be completed by June 10, as contemplated by the Court, if we back off of that day, I believe we would begin presenting our case shortly after the break would be our anticipation.

THE COURT: Well, let's address, then, the remaining two issues.

And they may be related, Ms. Polk, in that -- with regard to participant witnesses other -- well, for 2009. Is there anything else -- else other than what's in the pleadings?

MS. POLK: No, Your Honor. And just that we had listed quite a number of participants. We have narrowed that list to those remaining now who have information specifically about what was happening to the three victims. It is corroborative, not cumulative. I can address it further if the Court wants me to. But I think I fully set out the argument in our pleading.

THE COURT: And I'll see if the defense has anything else.

MR. KELLY: In regards to the participant witnesses, Judge, I believe -- we believe it's cumulative. And that was summarized in Miriam's pleading as to what we understand the testimony of each witness to be. And thus we would submit that issue on the pleading as to the participant witnesses.

As to the remaining witnesses, Mr. Li is going to address those.

THE COURT: Then with regard to the 2009 participant witnesses, I'm -- I'm going to be mindful of time. And I'm going to be mindful of when testimony gets into cumulative posture. But I'm not going to make a preruling on that.

This case is about 2009. That's the

1 issue. There have been many other things  
2 discussed. And I'm just going to see how it  
3 proceeds. If it appears to be cumulative, if I  
4 make that decision, I've just considered the need  
5 to impose time limits, to set time limits, whether  
6 it's the remaining five hours or something for all  
7 witnesses and -- and equal time for the defense.

8 I understand that in a -- in the criminal  
9 justice system, it's not so clear cut being able to  
10 do that specifically with regard to the right to  
11 cross-examine. You just can't put what might be  
12 deemed an arbitrary limit on that.

13 But I'm strongly considering time limits  
14 with regard to those witnesses. But before I do  
15 that, I'll see how it proceeds with the first  
16 witness called.

17 Ms. Polk raised something about whether  
18 or not some of the 2009 participants -- I think  
19 there were two of them that had the experience in  
20 the 2008 sweat lodge.

21 Isn't that right?

22 MS. POLK: Yes, Your Honor.

23 THE COURT: And that goes back to what I think  
24 the -- the basic guideline has been throughout. If  
25 somehow the 2008 experience had an affect on

1 conduct and thought in 2009, it would appear that  
2 would be relevant. And I don't know what else to  
3 say about that.

4 But if the defense wants to address that  
5 any further.

6 Mr. Kelly.

7 MR. KELLY: Judge, again, of course, all of  
8 these issues have been both -- have been both  
9 orally and in writing briefed and argued. And  
10 they're simply a 403 aspect. There is a cumulative  
11 aspect as well as the other issues that we've  
12 raised -- you know -- relating to 404(b).

13 And I think I understand from the Court  
14 that you're going to listen to the testimony and  
15 make the decision contemporaneous with the  
16 testimony. And we understand that. We're  
17 reserving our right to object based on 403 as -- as  
18 well as relevance.

19 THE COURT: Okay. Of course. And then  
20 objections can be made, of course.

21 That type of testimony, though, when --  
22 when talking about participants and prior  
23 experience, it was in this area that the leading  
24 questions problem or issue came up quite a bit.

25 And then some of that had to do with the

1 nature of the evidence that was going to be  
2 permitted. And I remember sidebars where Ms. Polk  
3 was leading, and there was an idea that that might  
4 be the way to do that just to avoid going beyond  
5 what was deemed appropriate with regard to those  
6 prior events.

7 But I do want to make clear that that  
8 area is one where the leading question is of  
9 concern when people start talking about what might  
10 have affected them from a prior sweat lodge and  
11 being directed to that and suggested as opposed to  
12 their actual testimony, their spontaneous direct  
13 testimony. I'll say that.

14 The other issue, I guess, is David Kent;  
15 correct?

16 MS. POLK: Yes, Your Honor.

17 THE COURT: Ms. Polk, anything else on that?

18 That's been briefed quite thoroughly.  
19 And I've read through that and the attachments.

20 MS. POLK: Your Honor, I won't repeat the  
21 state's argument, then. But just to emphasize that  
22 it is clear that the defense has made causation a  
23 central issue in this case. And many, many hours  
24 of testimony have been focused on these causation  
25 and explanations for other causes.

1 David -- Dr. Kent is that link that the  
2 Court had expressed concern was missing. He is  
3 that -- that witness who can talk specifically  
4 about medically what was going on in 2009 and makes  
5 that medical link between what people observed and  
6 what he personally observed and his personal  
7 observations, that it was heat and heat stroke that  
8 people were suffering from.

9 He was a witness, that his existence was  
10 known to the state, his existence was known to the  
11 defense. But the state did not know he was a  
12 doctor with that testimony until he contacted the  
13 state on March 14, at which point we immediately  
14 disclosed that email to the defense and then  
15 immediately disclosed the subsequent interview that  
16 occurred a couple of weeks early to the defense.

17 He is a witness that has been known to  
18 all the parties since 2008, actually to the  
19 defense, because he was a participant. And he was  
20 disclosed, I believe it was November of 2010, when  
21 the state disclosed all these spreadsheets with all  
22 the participants. And so it's not a surprise.  
23 There is no undue prejudice to the defense.

24 And, again, it is significant, important  
25 testimony that provides that link that what was

1 happening to participants in 2008 was heat related,  
2 that it was on that continuum, and his personal  
3 observation that -- that participants were  
4 suffering specifically from heat stroke.

5 And the state would urge the Court to  
6 allow Dr. Kent to testify for that very reason,  
7 that he is significant, has very important  
8 testimony, and it goes to this issue that the  
9 defense has made very central to this case, this  
10 issue of causation.

11 THE COURT: Mr. Li, are you going to address  
12 that?

13 MR. LI: Yes, Your Honor, just quickly. There  
14 is an issue of due diligence. And the state had  
15 the name of the -- of this individual. They simply  
16 didn't investigate this particular individual.  
17 They did investigate -- you know -- numerous people  
18 from prior sweat lodges. And they simply didn't do  
19 that with respect to Dr. Kent or Mr. Kent.

20 He arose simply because of the media  
21 surrounding this case. And so clearly whatever  
22 happens, we would also have to have some sort of  
23 voir dire about his qualifications as to whether he  
24 is a doctor, what -- you know -- what expertise he  
25 has in diagnosing heat stroke, all those sorts of

1 things.

2 And more importantly, he's not and does  
3 not purport to be a forensic pathologist and does  
4 not purport to talk about the pathophysiology of  
5 heat stroke in any way that's relevant to the cause  
6 of death for the three people who passed away.  
7 That's the problem. You have a person who is  
8 completely unconnected to the actual cause of death  
9 to the three people who passed away.

10 And you have another pathophysiologist,  
11 Dr. Mosley, who, in our pleading I think we showed  
12 the Court, said it would be, I believe, dangerous  
13 or -- or words to that effect to try to use a --  
14 prior -- you know -- diagnoses to impact -- you  
15 know -- future diagnoses. And that's an actual  
16 pathophysiologist talking about it.

17 That's a forensic pathologist talking  
18 about the mechanism of heat stroke and saying that  
19 you simply did not do that. And so not only is  
20 there a late disclosure issue, but there is a  
21 relevance issue. There's a qualifications issue.

22 Your Honor, we don't know if he's even an  
23 expert, and we do not have time. The state -- if  
24 they wanted to investigate this, they could have  
25 deployed their resources that way, found out

1 whether he was a doctor or not.

2 It's not -- it's not the defense's burden  
3 to try to figure out which cases -- or which --  
4 which witnesses are best for the state or -- or not  
5 best for the state.

6 It's up to the state to show that it's  
7 exercised due diligence to allow for late  
8 disclosure of an expert witness, Your Honor. And,  
9 moreover, there were references in the witnesses  
10 interviewed that there was a doctor in 2008 who was  
11 present. So it's not as if that was a mystery  
12 either.

13 THE COURT: Ms. Polk.

14 MS. POLK: If I can just briefly respond.  
15 First of all, Dr. Lyon had told the defense and, I  
16 believe, also testified that he believed that what  
17 happened on prior occasions is relevant to this  
18 issue of causation. And I would direct the Court's  
19 attention to State versus Smith, which is 140 Ariz.  
20 355, wherein the Court addressed the issue of court  
21 imposed sanctions for failure to make a disclosure  
22 required by Rule 15 and expressed the Arizona  
23 Supreme Court's position that precluding a witness  
24 should not be a remedy if there is sanctions that  
25 are short of that.

1 And specifically the Supreme Court set  
2 out the test in determining whether or not a  
3 witness late disclosed should be allowed to  
4 testify -- set forth four criteria: how vital the  
5 witness is to the case, whether the opposing party  
6 will be surprised, whether the discovery violation  
7 was motivated by bad faith, and then any other  
8 relevant circumstances.

9 Clearly the -- Dr. Kent is vital to the  
10 case. Clearly the defense has not been surprised.  
11 I believe we're now almost up to -- to four weeks  
12 since the state noticed him as a witness. This was  
13 not a violation motivated by bad faith.

14 I've laid out the circumstances under  
15 which we learned of Dr. Kent. And I think in light  
16 of all of those factors, in light of the tests set  
17 out by the Arizona Supreme Court, clearly these  
18 factors fall in favor of allowing Dr. Kent to  
19 testify.

20 MR. LI: Your Honor, may I please -- I'm  
21 sorry.

22 THE COURT: Yes. Go ahead.

23 MR. LI: There are some cases that we have  
24 cited as well: State v. Thompson, State v.  
25 Williams. Thompson is 190 Ariz. 555. Williams is

1 113 Ariz. 442. These all stand for the proposition  
2 that when the -- when the disclosure is tardy, when  
3 there were -- when the Court -- I mean when the  
4 state had the opportunity to do all the things --  
5 all the investigations that it needed to do and did  
6 not do so, preclusion is the proper remedy.

7 Your Honor, we are, I think, almost three  
8 months into trial now. And it -- it is -- this is  
9 not how orderly evidence should be presented. We  
10 should not be in a position where we are going to  
11 have a fight over the qualifications of a  
12 particular expert -- purported expert.

13 We should not be in a position where  
14 we're arguing about whether this -- this person  
15 whose motivations are unknown to us, who -- who  
16 arose out of media contact, and who now wants to  
17 come in and testify about the heat stroke.

18 The Court has actually seen the  
19 photographs of -- of the participants of 2008. And  
20 this person is not -- you know -- has no evidence  
21 that demonstrates he has any training about the  
22 physiology. He has no -- there is no evidence of  
23 any training as a forensic pathologist.

24 And it is -- you know -- the idea that  
25 the -- this -- this individual can come in and just

1 say, well -- you know -- based on my diagnosis,  
2 these folks had heat stroke, when forensic -- you  
3 know -- forensic pathologist, Dr. Mosley, another  
4 one of the state's witnesses, says that applying  
5 prior acts to the -- to the current situation would  
6 be dangerous. Now, he literally said it would be  
7 dangerous.

8 And -- you know -- we would submit that  
9 he knows because he is, in fact, a forensic  
10 pathologist and says that you can't do that.

11 THE COURT: Yes.

12 MS. POLK: Thank you, Judge. The -- the  
13 statement from Dr. Mosley that the defense has  
14 raised on several occasions really is taken out of  
15 context during an interview.

16 But I want to address what was just  
17 raised by Mr. Li, which his arguments go to the  
18 weight to be given this evidence, not its  
19 admissibility.

20 In this trial we have heard from several  
21 other doctors who were called as lay witnesses who  
22 had specific expertise: Dr. Wagoner,  
23 Dr. Armstrong, and then Dr. Beverly Bunn, who was  
24 the dentist. This is another doctor who is a  
25 participant and who is an eyewitness who has

1 expertise.

2 With regard to those other three doctors,  
3 there was no argument that they should not be  
4 allowed to testify. There was no argument about  
5 foundation or qualifications and no pretrial  
6 hearing to determine qualifications.

7 Dr. Kent is much the same. He is a lay  
8 witness participant with expertise in an area that  
9 this Court has already found is relevant. That's  
10 this issue of causation and what happened in that  
11 same sweat lodge on a prior occasion during a  
12 ceremony led by Mr. Ray.

13 The argument that the defense is raising  
14 with regard to his ability to testify about what he  
15 saw and what his opinions are would go to the  
16 weight and not to the admissibility.

17 MR. LI: Your Honor, the Court's prior ruling  
18 relating to this causation issue and prior acts and  
19 having any impact on -- on causation was prior to  
20 the Haddow issue, was prior to Dr. Mosley, was  
21 prior to a lot of that testimony that was elicited  
22 about the construction of the sweat lodge and what  
23 have you.

24 And -- you know -- I'm not going to  
25 re- -- attempt to relitigate our motion for a

1 mistrial, because we understand the Court's ruling  
2 here. But it is -- it is frankly not fair for the  
3 state to reap all of the various advantages that it  
4 seeks from various late disclosures, including  
5 Brady violation, and -- and not provide any remedy  
6 to the -- to the defense in terms of -- you know --  
7 protecting Mr. Ray's rights in this particular  
8 case.

9 The disclosure is late. It's -- it's  
10 months late. It -- it is to a tangential issue.  
11 This person who appears because of some media  
12 interest when this Court had actually seen  
13 photographs of 2008 and also has found that it's  
14 not clear that -- it's not actually clear what  
15 the 2008 sweat lodge evidence is even relevant to  
16 anymore.

17 We -- we made a motion, Your Honor, to  
18 strike. The Court denied that motion to strike all  
19 of the testimony relating to 2008. And we  
20 understand that. But there's still -- the state is  
21 acting as if we did not have this entire Haddow  
22 issue and we did not have all of the -- all of the  
23 evidence relating to the construction of the sweat  
24 lodge and all of those -- all of those complicated  
25 facts that the Court laid out in one of its oral

1 discussions about the situation that we're  
2 currently in.

3 And we can't turn the clock back to  
4 before that situation when -- before we knew that  
5 there were all these construction issues.

6 And the problem is now that the state  
7 wants to benefit from all of the -- all of the  
8 things that have happened in the last month or so,  
9 many of which are not the defense's -- well, all of  
10 which are not the defense's -- you know -- fault to  
11 the extent that there is a fault, all of which are  
12 the responsibility of the state's conduct.

13 And so we would urge the Court to  
14 recognize that this is an extraordinarily late --  
15 late disclosure, that they did have the opportunity  
16 to -- to interview this doctor. They could have  
17 asked him. They've asked all sorts of people.  
18 They've interviewed hundreds of people, as  
19 Detective Diskin has told the Court and this jury.

20 And -- and they decided not to interview  
21 this person. And then he pops out of the woodwork  
22 because of the media contact with respect to the  
23 trial. That's -- that's not the way an orderly  
24 trial should progress.

25 THE COURT: One thing that hasn't really been

1 discussed very much is how David Kent decided to  
2 come forward. Mr. Li has referenced saw something  
3 about it. Do you know that because you have the  
4 full interview that Detective Diskin conducted --  
5 conducted? I only have a few pages of the excerpts  
6 that leads off before the discussion of the  
7 photographs takes place. It's getting into the  
8 part where there are going to be photographs  
9 displayed apparently, and -- and I don't have  
10 anything past that.

11 But is that discussed in the detective's  
12 interview?

13 MR. LI: It was from the email. Well, I'll  
14 let Ms. Do talk. She understands it.

15 MS. DO: Your Honor, I don't recall the date.  
16 But I believe David Kent had contacted the County  
17 Attorney's Office through their website, and that  
18 email was forwarded to Detective Diskin.

19 And from the content of his email, it  
20 appeared that he was prompted by hearing about the  
21 case through the media. I don't unfortunately have  
22 that email in front of me. And I assume from the  
23 Court's question it was not attached as an exhibit.

24 THE COURT: I had specific orders elaborating  
25 on the rule of exclusion and preventing discussions

1 among witnesses, preventing media exposure.

2 Is there any information on that,  
3 Ms. Polk?

4 MS. POLK: Your Honor, yes. The email that he  
5 wrote on Saturday, March 12th, 2011, at 11:17 p.m.,  
6 the subject was Death -- James Ray sweat  
7 lodge 2009. Hello, Sir or Madam. I hear that  
8 these deaths are now the cause of serious charges  
9 against James Ray, and there is a large trial in  
10 Camp Verde.

11 That's all he says. He does not indicate  
12 that he has been watching it in any way, just that,  
13 I hear that these deaths are now the cause of  
14 serious charges, and there is a large trial.

15 But, Your Honor, again, the extent to  
16 which this witness, if he has paid attention to the  
17 media at all would be an appropriate subject for  
18 cross-examination.

19 THE COURT: Has he been asked about that? Is  
20 he -- is he watching the trial regularly? Does  
21 anybody know? Because that -- that would really be  
22 a factor in all this. Does anybody know?

23 MS. POLK: Your Honor, we do not know. I  
24 don't think he was asked. We can certainly contact  
25 him and report back to the Court later today,

1 assuming he's available. In the interview with  
2 doctor -- with Detective Diskin, I don't believe  
3 there is any questioning of that.

4 Detective Diskin is telling me simply  
5 that Dr. Kent told him that he did not know James  
6 Ray had been arrested, that he saw something on the  
7 news, and that prompted the email to us.

8 MR. LI: Your Honor, just for -- I mean, I  
9 don't want to sidetrack on this particular issue.  
10 But one of the other consequences of calling

11 Dr. Kent will be that we're going to have to have a  
12 minitrial about 2008. Because the facts are that  
13 we have pictures of this.

14 This guy comes out. He -- he hears that  
15 there is a trial going on. And I suspect that he's  
16 hearing it either through other participants who  
17 are -- who are following the news or he's watching  
18 it himself. And then he comes in and testifies,  
19 and he makes some rather elaborate claims about  
20 what actually happened there. I think he said he  
21 saved something like six lives. And the Court has  
22 seen the photographs.

23 THE COURT: I think he said six were critical,  
24 ten were serious.

25 MR. LI: There you go. And I think he says he

1 saved a life.

2 THE COURT: Two or three --

3 MR. LI: Right.

4 THE COURT: -- I think he says he saved.

5 MR. LI: And -- and the Court has seen the  
6 photographs. And -- and so the issue then becomes  
7 if -- if he comes in and testifies in this manner,  
8 we will have to call various witnesses to rebut  
9 what he's saying.

10 We cannot simply let that -- these what I  
11 would characterize as rather wild descriptions of  
12 what happened in 2008 affect this jury. It -- it  
13 is -- and that adds -- adds weeks.

14 THE COURT: Ms. Polk.

15 MS. POLK: Your Honor, again, if -- the  
16 defense has made causation a central issue in this  
17 case. We have been in trial taking testimony now  
18 since March 2nd with hours and hours focused on the  
19 causation issue.

20 To date the state has only had three  
21 witnesses talk about prior years. And that was  
22 Debbie Mercer, Ted Mercer, and then Jennifer Haley  
23 very briefly. That's the only testimony this jury  
24 has heard so far about what happened in prior  
25 years, in contrast to this -- this trial,

1 essentially, being focused on causation.

2 Dr. Kent is a significant, crucial  
3 witness to this issue of causation. If there are  
4 concerns about what he has been exposed to, then he  
5 certainly can be cross-examined on that. But just  
6 as the other doctors testified about 2009, this is  
7 a doctor from 2008 who can provide that link --  
8 that medical link about what was going on and how  
9 it relates to heat -- specifically to heat, which  
10 the defense has challenged as the issue of  
11 causation.

12 MR. LI: Your Honor, I think --

13 MS. POLK: The fact that calling a witness  
14 necessitates the defense to call witnesses is just  
15 how a trial proceeds. But the -- to suggest that  
16 if we allow in relevant testimony through a  
17 relevant witness, that the Court shouldn't do that  
18 because then they're going to have to call  
19 witnesses to combat that shouldn't be a reason to  
20 preclude a witness who has crucial information  
21 relating to this issue of causation, which the  
22 defense has made central to this case.

23 MR. LI: Your Honor, what -- what is simply  
24 incorrect about what the state is saying is it's  
25 not the defense that makes any particular issue

1 central to the case. It is the state's burden to  
2 prove causation. We're not creating an issue. The  
3 state actually has to prove that issue.

4 That is something that we noticed from  
5 the beginning of this case, that one of our  
6 defenses would be to challenge the state's ability  
7 to prove beyond a reasonable doubt causation. And  
8 the state has known for quite some time that among  
9 the things that we would be challenging is the  
10 medical causation of -- of the deaths. That's why  
11 we listed from almost the beginning the fact that  
12 we were going to hire our own medical examiner who  
13 would look at all the evidence and tell this jury  
14 his issue, his -- his concerns about the causation  
15 issue.

16 So -- so the idea that the defense has  
17 created an issue out of causation is incorrect. It  
18 is actually the state's burden to prove causation,  
19 and we have said from the beginning that we were  
20 challenging the state's ability.

21 The -- the idea that -- that this doctor  
22 can -- or this guy can come in here and testify,  
23 who hasn't been qualified under any circumstance,  
24 before this Court and then just -- just to throw it  
25 out there and see what the jury makes of it,

1 notwithstanding the fact that this Court has seen  
2 the evidence; has heard from other testimony  
3 relating to what happened in 2008; has seen  
4 witnesses on the stand retract their prior  
5 statements relating to 2008, saying that there were  
6 40 people down or however many folks Ms. Mercer  
7 said were down, and then said I exaggerated; has  
8 seen all of that evidence, and then to let this  
9 fellow come in and just -- just testify and then  
10 have -- leave it to the defense to clean it up,  
11 that -- that is not how a trial should be done.

12 If the state wanted to call this guy and  
13 wanted to qualify him as an expert to discuss what  
14 happened in 2008, we could have done this back in  
15 November. We could have -- he could have been part  
16 of this Terrazas hearing that we had and spent  
17 three days of the Court's time on. But they  
18 didn't.

19 And so now here we are in trial. And  
20 the -- and the problem is that the state has  
21 created this problem. It's not the defense -- you  
22 know -- raising some issue about causation. That's  
23 our right. We -- we are allowed to try to hold the  
24 state to its burden.

25 THE COURT: I'm going to think about this some



1 more. I want to say at this time, though, I do not  
 2 understand the disclosure aspect of this,  
 3 disclosed, essentially, on March 14 in some  
 4 fashion. But I think pretty much just the name and  
 5 the -- and the possibility of being an expert. And  
 6 I guess the email was provided as well showing the  
 7 circumstances. And then there is no information  
 8 provided for another three weeks, I think. I mean,  
 9 I think it's April 4th that the interview takes  
 10 place.

11 And, Ms. Polk and Mr. Hughes, I do not  
 12 agree with the assessment that -- or the view that  
 13 witnesses aren't -- don't really come under the  
 14 15.6 obligations. Witnesses are important because  
 15 of the information they have. And this information  
 16 is different from anything that I -- that I have  
 17 seen based on the 404(b) hearings, what's -- what's  
 18 proceeded here.

19 This witness, essentially, says at one  
 20 point in the excerpt that Ms. Polk provided, said  
 21 that if he was in a hospital, he would have had a  
 22 Code Blue -- or he would have coded these people.  
 23 That's -- well, and I've mentioned before in the  
 24 404(b), there just wasn't any medical testimony at  
 25 all.

1 But based on what was provided, just the  
 2 lay observations and -- and beyond that because no  
 3 more evidence was allowed in that 404(b) context,  
 4 this is a completely new aspect, it appears to me.

5 Ms. Polk, do you disagree with that?

6 MS. POLK: Your Honor, no. I agree -- I agree  
 7 actually with a couple of things the Court said.

8 Just briefly on the issue of 15.6, I  
 9 won't quibble with the Court. We have never read  
 10 that rule that does not reference witnesses. It  
 11 just talks about the information -- or material, I  
 12 believe, are the words used in 15.6. Even that the  
 13 state has never read that to mean that we have to  
 14 file an affidavit or a 15.6 motion with regard to  
 15 witnesses. But I understand, looking at the rule,  
 16 why the -- why the Court could conclude that.

17 But we felt in listing him as a witness  
 18 on March 14th that we were -- were providing that  
 19 notice to the parties.

20 Your Honor, that -- the 404(b) hearing  
 21 did not include medical testimony. That hearing  
 22 would have been far different if we had had notice  
 23 of the defense's case about organophosphates. And,  
 24 again, as the Court knows, there was no mention of  
 25 organophosphates until we -- we interviewed the

1 state's -- the defense's expert at the very end of  
 2 January. And there is no reference in his report  
 3 to organophosphates. And it was simply through a  
 4 question by Mr. Hughes in interviewing Dr. Paul  
 5 that Dr. Paul made reference to organophosphates.

6 Again, the state had no further  
 7 information about organophosphates nor where it was  
 8 in the record until the opening statement when  
 9 Mr. Li played a clip with that reference to  
 10 organophosphates. But that's relevant to the  
 11 404(b) issue because that 404(b) hearing would have  
 12 been very different if we had understood at that  
 13 point that the defense was going to claim that  
 14 organophosphates was the cause of death.

15 When we did the 404(b) hearing, our focus  
 16 was on the issue of the mental state of the  
 17 defendant, that the prior sweat lodges gave him  
 18 notice -- prior notice that his conduct was  
 19 reckless. And we were focusing on the issue of the  
 20 similarity between the prior events and the current  
 21 event.

22 We were not focusing on the issue of  
 23 causation. And, as the Court has correctly noted,  
 24 causation would not be a subject for a 404(b)  
 25 hearing. The whole causation is integral to the

1 trial itself. And the case has recognized that  
 2 distinction between prior acts that you're offering  
 3 for limited purposes versus the history and how  
 4 that is just part of the case that's intertwined  
 5 with the facts of the case and that you don't do a  
 6 Terrazas hearing.

7 But I agree with the Court. We did not  
 8 offer medical testimony at the 404(b) hearing.  
 9 But, again, because we didn't know anything about  
 10 this issue of organophosphates. And, second,  
 11 because our focus was not causation with regard to  
 12 the prior sweat lodges but just the issue of notice  
 13 and the requisite mental state of the defendant.

14 THE COURT: This is a motion in limine related  
 15 by the defense, so you're going to get the last  
 16 word, Mr. Li. It's your motion in limine.

17 But I want to ask Ms. Polk, and you can  
 18 address this as well.

19 In Dr. Paul's report, what is stated  
 20 about causation in that report that is provided  
 21 in -- in January? The interview is in January.

22 MS. POLK: Yes, Your Honor. We didn't get the  
 23 report -- and I'll let Mr. Hughes talk more about  
 24 the report. But we didn't get the report, I  
 25 believe, until January 10th maybe of this year,

1 sometime in January.

2 THE COURT: And then the interview is at the  
3 end of January.

4 But, Mr. Hughes, what -- I mean, what  
5 was -- what was stated about causation in the Paul  
6 report?

7 MR. HUGHES: Your Honor, as I recall -- and I  
8 believe his report has been marked now as an  
9 exhibit. But as I recall, he mentioned in the  
10 report that he had doubts that -- about heat  
11 stroke, specifically the lack of a rectal  
12 temperature and the signs and symptoms, that the  
13 Court's heard some testimony about from other  
14 witnesses, that led him to believe there could be  
15 other factors that led to the cause of the people's  
16 deaths.

17 He never mentioned organophosphates. He  
18 never mentioned what other things it was that he  
19 believed could have led. And, again, I would defer  
20 to the report.

21 MR. LI: May I, Your Honor?

22 THE COURT: Of course.

23 Go ahead.

24 MR. HUGHES: But it -- it wasn't until the  
25 interview when I asked him, basically, well, what

1 do you think could have killed these three people,  
2 that he then said, well, I think it's the signs and  
3 symptoms that I'm seeing are consistent with  
4 organophosphates. So that came out at the  
5 interview out in Los Angeles of the doctor at the  
6 end of January.

7 THE COURT: Okay.

8 Mr. Li.

9 MR. LI: Your Honor, two corrections: One,  
10 we're not -- we haven't said that organophos- --  
11 it's not our burden to say what caused folks to  
12 die. But we have noted that many of the signs and  
13 symptoms are consistent with organophosphates and  
14 that you can't rule it out. That's -- that's the  
15 lay of the land right now.

16 It's never been our burden to prove it.  
17 And I think the state needs to understand that and  
18 internalize it, that it is not the defense's burden  
19 to prove -- disprove causation.

20 What -- what Mr. -- or Dr. Paul said is  
21 that -- he said, it is likely that a secondary  
22 event or process contributed to the morbidity and  
23 death that occurred during this event, essentially,  
24 due to the lack of evidence supporting a diagnosis  
25 of nonexertional heat stroke.

1 It is likely that a secondary event or  
2 process contributed to the morbidity and death that  
3 occurred at -- during this event.

4 So -- and to correct the record with  
5 respect to what Mr. Hughes said relating to the  
6 interview, I think the way it happened was they  
7 asked, well, what would you have done if you were  
8 investigating this as a -- as a coroner or as a  
9 medical examiner?

10 And he said, well, I would have done --  
11 you know -- I don't want to criticize other --  
12 other folks. But I would have looked at other  
13 areas.

14 What would you have looked at?

15 And that's when he said, one of the  
16 things I would have looked at is organophosphates.  
17 Because a lot of the symptoms that you're seeing  
18 here are consistent with organophosphates.

19 It also happened to be consistent with  
20 other toxins, for instance, carbonate, which is  
21 another form of pesticide. But we've never taken  
22 the position that it's only organophosphates. And  
23 that's the only thing that could have caused these  
24 people to die. And so I don't think that's quite  
25 accurate.

1 The other point I would make, Your Honor,  
2 is that it is -- two points: One, the state is not  
3 surprised by toxicity as an issue. It is all over  
4 the reports. We didn't manufacture any of this.  
5 All of this is from the state's own evidence.

6 The tape -- the organophosphates tape  
7 that we've played now, Exhibit 742 -- that is the  
8 state's own evidence. We found -- Ms. Do found it  
9 after listening for hours and hours and hours of  
10 interviews and dead space in interviews.

11 So that's what -- it was because of our  
12 due diligence looking at the state's evidence that  
13 we were able to find the statement on the evening  
14 of the accident that discusses organophosphates.

15 They've never done anything to try to  
16 figure out who said it. They just -- you know --  
17 take the position that they don't know who said it  
18 and that it's really the defense's burden to figure  
19 all that out. That's not the case.

20 If you look at the medical records, as  
21 the Court has seen over and over again, the -- the  
22 mention of toxicity and specific brands of  
23 toxicity, it's replete through the evidence.

24 And I -- and I just want to make that  
25 point. Because the idea that when Ms. Polk stands

1 up and says, well -- you know -- we've been  
2 surprised by this whole toxicity defense because we  
3 didn't know, and the defense has sandbagged us  
4 about this organophosphate issue -- that's just not  
5 the case.

6 The state has technically known for  
7 purposes of -- you know -- maybe Detective Diskin  
8 didn't know. But the state has technically been on  
9 notice of organophosphates from October 8th, 2009,  
10 the night of the accident. So it -- it is not true  
11 that they've been, quote, unquote, sandbagged in  
12 any -- any respect.

13 The reality is that detectives were in  
14 the room recording what was happening, talking to  
15 people. And they need -- you know -- I understand  
16 the state may take some other position. But an EMT  
17 professional came in and gave the discussion that  
18 the Court has already heard in 742. So it's not  
19 the case that they've been surprised by anything.  
20 This is their own evidence.

21 And the fact that we have -- have  
22 followed that lead, as we have followed every lead  
23 that has been provided to us, in a timely manner  
24 and as we would follow had we been provided the  
25 Haddow report in a timely manner, we would have

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1 followed that lead as well.

2 But as we have followed every single  
3 lead, we have now been able to challenge the idea  
4 that the state has an ironclad or  
5 beyond-a-reasonable-doubt causation. That is our  
6 right as defense attorneys.

7 And this idea that it's sort of an  
8 equal -- that we should have told them about the  
9 weakness of the case, as the Court has already  
10 acknowledged in a jury instruction to this jury,  
11 that's not our responsibility. It is the state's  
12 responsibility to prove all of the elements,  
13 including causation, beyond a reasonable doubt.

14 If the Court wants to know more about  
15 the -- Mr. -- Dr. Paul's report, I can -- I can  
16 provide or bring up a copy.

17 THE COURT: I have my own copies, as you know.

18 MR. LI: Okay.

19 THE COURT: If I could have the number.

20 MS. DO: Exhibit 1000, Your Honor.

21 MR. LI: It's Exhibit 1000.

22 THE COURT: Okay.

23 MR. HUGHES: And, Your Honor, on -- on that  
24 topic, I honestly forgot that I had written this  
25 letter. On January 12th I wrote a letter to

1 Ms. Do, a very short letter, that Dr. Paul's report  
2 does not disclose his opinion as to the cause of  
3 death of the victims in this case.

4 If he has formulated any such opinion, we  
5 request you promptly disclose it and the reasons  
6 supporting the opinion. That was sent out on  
7 January 12. And there was no further  
8 supplementation.

9 Again, it wasn't until I asked a question  
10 of the doctor in his interview that we found out  
11 about his opinion about organophosphates.

12 MR. LI: The state is just irresponsibly  
13 misstating what the record is, Your Honor. The --  
14 the doctor did not say -- and we have never taken  
15 the position that we know what caused these people  
16 to die.

17 We can't prove it because they don't have  
18 the blood and they didn't test the blood when they  
19 had the chance. And they threw away all the  
20 evidence when they had the chance to actually  
21 investigate it.

22 They collected .0006693 percent of the  
23 dirt there and never tested it. We don't know what  
24 caused these folks to die. They happened to have  
25 symptoms that are consistent with organophosphates.

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1 And what Mr. Paul -- Dr. Paul said is,  
2 that's something I would have looked at, as the  
3 state probably should have looked at back on  
4 October 8, 2009.

5 I think one of the -- and the reason why  
6 I'm saying this so emphatically, Your Honor, is  
7 because we are repeatedly -- as the defense here,  
8 we are repeatedly being put in the position of --  
9 by the state of them suggesting that we had some  
10 sort of disclosure problem with them, when, in  
11 fact, the reality is they've known about  
12 organophosphates from day one of this case.

13 They could have investigated it. They  
14 didn't investigate it. That's what Dr. Paul said.  
15 He did not say and we have never taken the position  
16 that -- that we know what caused these folks to  
17 die.

18 THE COURT: Thank you.

19 MS. POLK: Your Honor, may I provide you with  
20 a copy of the email that we received from Dr. Kent.  
21 I see in our pleadings that neither party attached  
22 this as an exhibit.

23 THE COURT: I believe I said --

24 MR. LI: Exhibit --

25 THE COURT: -- I saw that.

1 MR. LI: Yeah. It's there. It's Exhibit A  
2 to -- it's an exhibit to -- it's Exhibit -- just  
3 give me a sec, Your Honor.

4 THE COURT: I know I've seen an email for --  
5 from March 12th.

6 MR. LI: It's Exhibit A to the -- to Mr. Ray's  
7 motion to preclude the testimony.

8 MS. POLK: And I raise it, Your Honor, because  
9 the Court expressed concern that the content of  
10 Dr. Kent's testimony was not made known to the  
11 defense until Detective Diskin interviewed him.

12 But, in fact, in this email provided to  
13 the defense on March 14th, the email from Dr. Kent  
14 specifically states, I saw several attendees who  
15 could have become critically ill. I rallied the  
16 assistants to treat the heat stroke victims more  
17 aggressively and at the end of the ceremony  
18 gathered a few of the stronger people. And we went  
19 back inside the lodge and dragged out three more  
20 people who were unconscious and alone in the heat.  
21 With the chaos outside the lodge, I expect they  
22 would have been left there longer and died.

23 It's a quick synopsis. And then what  
24 follows in the interview is much more detail about  
25 that. But certainly on March 14, the defense had

1 notice as to the bulk or the -- the general  
2 contents of what Dr. Kent's testimony would be.

3 MR. LI: I misspoke, Your Honor. It's  
4 Exhibit A to the state's response.

5 THE COURT: And I'm looking at it right now,  
6 Mr. Li. And I did have another conference  
7 scheduled at 9:00. But, Mr. Li -- and I'm looking  
8 at the exhibit now. And I guess what I had just  
9 finished reading, again, were the actual excerpts  
10 from the interview, which in very small print --  
11 and I don't know how many actual pages it was. I  
12 read all this detail and -- you know -- comparing  
13 that to what was actually provided that.

14 But as Ms. Polk indicates, there -- there  
15 is some -- some detail in -- in eight or nine lines  
16 or so.

17 MR. LI: It's not an expert disclosure,  
18 Your Honor, by any -- any stretch of the  
19 imagination under any rule. You know, it is simply  
20 not enough for the state to sort of hint at various  
21 ideas that it might have about what its purported  
22 experts are going to testify about.

23 There are very strict requirements as to  
24 what an expert can testify about. And this  
25 disclosure in the middle of trial is inappropriate.

1 And, frankly, as -- as the Court has already  
2 acknowledged, it is not consistent in any way with  
3 the evidence that we've already adduced at trial  
4 and at the 404(b) hearing. This is so outside of  
5 the heartland of the testimony that we have heard  
6 from, I think, three or four different witnesses  
7 and the photographs that we've seen. And so the  
8 idea that -- that this sort of -- you know --  
9 disclosure in an email.

10 And, Your Honor, just for the record, the  
11 email is during trial. It's not -- it's not prior  
12 to trial.

13 THE COURT: I know. You got it on March 14th.

14 MR. LI: And -- and --

15 THE COURT: I realize that. And then Ms. Polk  
16 received it on the 12th.

17 MR. LI: And, Your Honor, just to -- you  
18 know -- some of the cases that the Court is going  
19 to look at, the cases where experts have been  
20 excluded, the late disclosure was actually on the  
21 day before trial. This is during trial.

22 Your Honor, there are so many parts of  
23 this trial that may have been done differently had  
24 we gotten adequate disclosure from the state both  
25 in -- in compliance with their Brady obligation and

1 with respect to this particular issue. Opening  
2 statements would have been done -- done different.  
3 There would have been different rulings. We would  
4 have understood that the 2008 issues were going to  
5 come in.

6 We would have -- there are so many things  
7 that could have been done differently had the state  
8 actually disclosed things on -- in a timely manner  
9 so that we could have all -- okay. Here are the  
10 issues that we're going to be fighting over in  
11 court. Here's the issues that we're going to  
12 present to the jury, and we're going to argue about  
13 it.

14 And what's happening now is that the  
15 defense has -- has staked out a position, and then  
16 the -- the state keeps on trying to backfill all of  
17 the various arguments to rebut in its case in chief  
18 the various points that we have made.

19 And I think we've made the point that  
20 there is a causation issue here. So they've tried  
21 to backfill that in the middle of trial with late  
22 disclosures and -- and Brady -- Brady material.

23 And so -- and -- you know -- and then,  
24 Your Honor -- and I know we've got actually another  
25 issue to discuss with respect to Dr. Dickson, who

1 is the next witness.

2 THE COURT: Oh, goodness.

3 MR. LI: But --

4 THE COURT: I'm already late on the conference  
5 in another case.

6 MR. LI: I understand, Your Honor. And I'll  
7 just make this last point, and then -- and then we  
8 can address the Dickson issue.

9 But the state through it's intentional  
10 questioning back-doored the Haddow report. There  
11 was a specific discussion -- question. And I think  
12 the Court knows exactly the transcript that I  
13 quoted where the County Attorney herself said to  
14 the detective, what do you believe was the cause of  
15 death?

16 The detective answered, heat and carbon  
17 dioxide. The County Attorney then specifically and  
18 purposely asked, was that information -- was that  
19 consistent with information you received from a man  
20 named Rick Haddow? And -- and Detective Diskin  
21 said, yes.

22 And then now we have this entire issue  
23 now about hypercapnia that the Court has addressed  
24 in its ruling. What the Court did not address is  
25 the fact -- is that line of questioning, which we

1 contend can only be -- and I've written it down.  
2 Is that consistent with the information that you  
3 learned from the man named Rick Haddow? That is an  
4 intentional effort to bring in the Haddow report  
5 through Detective Diskin. And we'd ask that the  
6 Court make that finding.

7 MS. POLK: And, Your Honor, in the interest of  
8 time, I won't respond now. But when appropriate, I  
9 would like to make a full record on -- on that  
10 issue. I don't believe what Mr. Li has said is  
11 correct.

12 THE COURT: Okay. And could we talk about --  
13 we need to talk about the next witness apparently.

14 Mr. Hughes and Ms. Polk.

15 MR. HUGHES: Your Honor, the state does intend  
16 to call Dr. Dickson. The state had asked  
17 Dr. Dickson back at the end of March or perhaps the  
18 first day of April to do some follow up on  
19 organophosphates and on rat poison. And we sent an  
20 email to the defense on April 5th indicating the  
21 doctor might be testifying about those topics.

22 Following that letter we tried to get the  
23 defense to do an interview of the doctor, which  
24 finally was accomplished yesterday. And after the  
25 interview was over, Ms. Do indicated that she

1 believed she would be -- she wanted to talk to her  
2 cocounsel, that she believed she would be raising  
3 an issue this morning about whether Dr. Dickson  
4 could testify or not. And that's -- that's about  
5 all that I know on that.

6 THE COURT: Ms. Do.

7 MS. DO: Thank you, Your Honor. I'll pick up  
8 where Mr. Li left off regarding the Haddow report.  
9 I think the Court has marked as a court exhibit the  
10 email that was sent to Dr. Dickson, as well as  
11 Dr. Mosley and Dr. Lyon, where the state after the  
12 Court found a Brady violation provided those expert  
13 witnesses with a copy of the Haddow report. I  
14 believe the email was dated April 15.

15 I did interview Dr. Dickson yesterday.  
16 And -- you know -- unfortunately, when you're in  
17 trial, it's difficult to find time to -- to do  
18 these additional investigations while -- when the  
19 state continually provides additional information  
20 and materials to witnesses while we're in trial.

21 I learned yesterday that Dr. Dickson now  
22 believes that the signs and symptoms that he  
23 reviewed back in 2010 but made no mention of  
24 hypercapnia -- he believes now after reviewing the  
25 Haddow report -- he, in fact, did review it -- that

1 these signs and symptoms are consistent with  
2 hypercapnia.

3 He wrote three reports about the causes  
4 of death for the decedents dated January 10, 2011.  
5 He made no mention of hypercapnia. His conclusion,  
6 in conflict with the medical examiner's testimony  
7 in this case, was that it was heat stroke and  
8 nothing else.

9 I interviewed him on January 25, 2011.  
10 And armed with the disclosure I had, I interviewed  
11 him only about his conclusion of heat stroke. I  
12 had no idea that the doctor would offer an opinion  
13 regarding hypercapnia. I asked him specifically,  
14 Doctor, what is your differential diagnosis based  
15 upon what you reviewed? He made no mention of  
16 hypercapnia.

17 Yesterday he said that it's definitely a  
18 possibility. He rendered opinions about miosis  
19 being consistent. And the problem that I'm  
20 having -- and the Court knows that I've been taking  
21 on the witnesses regarding the medical issues -- is  
22 that beginning with Dr. Mosley, this is the first  
23 time that I've heard of miosis being a sign and  
24 symptom of hypercapnia.

25 And I just have not been allowed the time

1 to do my due diligence in researching or exploring  
2 with my own expert whether or not that is actually  
3 true. To date I have not found any published  
4 literature that says miosis is a sign in  
5 hypercapnia.

6 This really highlights the problem that  
7 the defense is faced with since the state violated  
8 Brady, magnified that problem by providing that  
9 information that the Court found was in violation  
10 of Brady to experts who were going to take the  
11 stand.

12 Now I've got an expert who is tainted by  
13 that Haddow report. And it's difficult for me to  
14 determine how I'm going to navigate through that in  
15 cross-examination while complying with this Court's  
16 order that we should not ask questions that elicit  
17 hearsay. So that's one problem.

18 The other issues that I have with  
19 Dr. Dickson is that when we were provided notice of  
20 his testimony -- or proposed testimony in this  
21 court, the state filed the 21st supplemental  
22 disclosure on December 3rd, 2010, noticing his  
23 scope -- the scope of his testimony was he will  
24 testify as to identification of medical treatment  
25 of heat-related illnesses.

1 And since receiving that disclosure, the  
2 state has through informal notices expanded the  
3 scope of his testimony to now be offering him as an  
4 expert on the cause of death.

5 Dr. Dickson, one, did not treat any of  
6 the patients in this case, and, two, is not a  
7 medical or forensic pathologist. He's not  
8 qualified to testify to the cause of death. He was  
9 asked by the state to, essentially, review the  
10 medical examiners' autopsy reports and medical  
11 records and to determine whether or not these  
12 medical examiners' conclusion on cause of death is  
13 correct or not.

14 The Court has heard from the medical  
15 examiners. And, essentially, what I expect is  
16 Dr. Dickson will come in and impeach the state's  
17 own witnesses and say it's heat stroke. I rule out  
18 organophosphates. The signs and symptoms are  
19 inconsistent.

20 So there is an issue about whether or not  
21 he's even qualified to testify regarding cause of  
22 death.

23 What we were provided notice of was that  
24 he was going to testify to the signs and symptoms  
25 of heat-related illnesses. And I would submit that

1 that's now cumulative. We've had three medical  
2 doctors in the state's case testify to heat-related  
3 illnesses, signs and symptoms in addition to Nell  
4 Armstrong -- I'm sorry, Nell Wagoner and Jeanne  
5 Armstrong who proffered some testimony on that  
6 issue.

7 I know that the Court has a conference.  
8 But I also wanted to note that there are other  
9 problems with Dr. Dickson. In his report, he  
10 specifically relies on the prior events to reach  
11 his conclusion that this was, in fact, heat stroke.

12 The Court has made numerous rulings  
13 regarding admissibility of prior events and has now  
14 limited any additional testimony to what has  
15 already been adduced in this trial by way of the  
16 2007 and 2008.

17 The state provided him with Daniel  
18 Pfankuch's -- or Daniel P.'s medical record.  
19 Despite what the Court has seen, he's rendering an  
20 opinion that Daniel P. suffered from heat stroke.  
21 So I would ask the Court to review the report. I  
22 think that that particular opinion should not be  
23 admitted if he is qualified to testify.

24 And then, finally, he rendered an opinion  
25 in his report that goes to knowledge and

1 recklessness, which is far beyond the scope of any  
2 medical expert. He says, basically, that, in my  
3 opinion, appropriately trained medical personnel  
4 that are not being exposed to extreme heat of the  
5 sweat lodge should have been present at the event  
6 to evaluate all the participants for heat illness  
7 symptoms.

8 Multiple patients at this event and prior  
9 events had signs and symptoms of classic heat  
10 stroke. In my opinion, the decedents' symptoms  
11 were not recognized and treated soon enough, which  
12 resulted in their deaths.

13 So all of the opinions that I'm  
14 describing for the Court go beyond what was  
15 disclosed in the 21st supplemental. It goes beyond  
16 his training and his experience and qualifications.  
17 It goes into areas that raises for us against the  
18 issues of the Haddow report and disclosure  
19 violations.

20 THE COURT: The CO2 information from the  
21 Haddow report isn't really the exculpatory  
22 information. That's information, though, that  
23 should have been disclosed under the normal  
24 disclosure rules. And I mentioned in the ruling,  
25 CO2 has been mentioned throughout the case and

1 brought up.

2 With regard to discussing what should  
3 have been done, that's -- that's, again, going into  
4 some kind of standard of care. Again, I don't -- I  
5 don't see how a medical doctor would -- he can talk  
6 about causation but not about how someone who is  
7 conducting this type of an -- of an event, how it  
8 should be conducted.

9 And, once again, it gets into that  
10 distinction between negligence principles and  
11 recklessness principles as well.

12 The other matters with regard to  
13 causation. I've indicated before, and I  
14 anticipated this. It's in the record. That if the  
15 state appropriately provides what has been observed  
16 in the 2007, 2008, he can deal with that.

17 I'm more concerned with Daniel P.,  
18 though, because that was a subject of a separate  
19 motion and a separate issue.

20 MR. HUGHES: Your Honor, the doctor's opinion  
21 about Daniel P. was rendered long before the Court  
22 made that -- made the ruling. And I did not intend  
23 to ask the doctor about Mr. P.

24 In fact, prior to our starting today,  
25 I'll sit down with him and tell him that I don't

1 intend to ask anything about it. I'll explain the  
2 Court's ruling. And I assume Ms. Do won't ask him  
3 about it either. So unless Ms. Do corrects me that  
4 she will ask about that, I'll let him know that --  
5 that he shouldn't expect any questions.

6 With respect to Mr. Haddow's report, he  
7 indicated at our interview he didn't really pay  
8 much attention. It didn't really open his -- I  
9 think the words he said was Haddow's report didn't  
10 open his mind to anything new about the conditions  
11 inside the sweat lodge, because he had read in the  
12 witness statements that there were areas of good  
13 air and bad air. And I will make it very clear to  
14 him that I won't ask him anything about  
15 Mr. Haddow's report either.

16 THE COURT: Ms. Do, points out, though, that  
17 this is the first time hypercapnia ever gets  
18 mentioned by him.

19 MS. DO: Your Honor, unlike Dr. Mosley, who  
20 when I asked about differential diagnoses, did  
21 throw out the possibility of CO2, Dr. Dickson wrote  
22 three reports. I interviewed him on January 25,  
23 2011, and asked very specific questions and  
24 followed up by continually asking, what else would  
25 you consider?

1 And so I find it difficult now after he  
2 has received the Haddow report, reviewed it, and  
3 considered it that -- you know -- he's just saying  
4 that hypercapnia has always been there.

5 So what I see, basically, is an expert  
6 witness being tainted with information that has  
7 been precluded.

8 MR. HUGHES: And, Your Honor, he -- Mr. -- or  
9 Dr. Dickson was asked about that also, and said  
10 he's had the opinion about hypercapnia since before  
11 the Haddow report. During his interview -- and  
12 remember, doctor -- in the order of things,  
13 Dr. Dickson was interviewed, I believe, before he  
14 even received Dr. Paul's report before we had  
15 interviewed Dr. Paul.

16 But in Dr. Dickson's report, for whatever  
17 reason, there were -- in his interview there were  
18 no questions whatsoever about -- from the defense,  
19 from anybody, about organophosphates, about what  
20 could explain these other causes or symptoms that  
21 we've been hearing about in other patients, like  
22 the miosis, for the foaming at the mouth, things --  
23 there was just no questioning about any of these  
24 areas.

25 And so the doctor didn't have an

1 opportunity to explain at that time why he believed  
2 that those symptoms that the defense now believes  
3 are consistent with organophosphates -- why they  
4 would be consistent with the deaths based on heat  
5 or exposure inside of the sweat lodge.

6 Again, if he had been asked about it -- I  
7 think he tried to make it clear in his interview  
8 last night -- he would have explained that. But he  
9 wasn't asked about that.

10 And we did disclose that he would talk  
11 about -- in our original disclosure statement about  
12 the deaths from heat. And, I think, to talk about  
13 deaths from heat, it's important to talk about why  
14 the other theories that the defense has now raised  
15 don't contradict that opinion.

16 And then certainly since then, we've sent  
17 out an email on April 5th to the defense indicating  
18 that he'd be talking about signs and symptoms and  
19 theories involving poisoning. We clarified also  
20 that included organophosphates, rat poison, and  
21 that sort of thing.

22 But I don't believe this is something new  
23 by the doctor. He made it clear he's had this  
24 opinion.

25 With respect to his qualifications, I

1 believe he's board certified, not only in emergency  
2 medicine, but also in the field of medicine called  
3 "hyperbaric medicine," which he explained actually  
4 deals with issues involving hypercapnia and other  
5 gases in the blood. So he's -- if anything, he is  
6 eminently qualified to talk about his opinion that,  
7 for example, hypercapnia could cause the miosis.

8 THE COURT: Ms. Do, anything else?

9 MS. DO: Your Honor -- you know -- the state  
10 doesn't want to acknowledge United States v.  
11 Marshall. It's not the defense's obligation or  
12 burden to point out the state's weaknesses. And  
13 when we interviewed their experts, we're there to  
14 determine what their experts know, not to educate  
15 their experts and provide them with the weaknesses  
16 in their opinions.

17 I had a -- I had a very, very broad  
18 question for each of these experts. And that is,  
19 in your determination of the cause of death, what  
20 are the differential diagnoses? And for a doctor  
21 that Mr. Hughes purports to be an expert in  
22 hypercapnia to fail to mention that it was obvious  
23 from the signs and symptoms, I find trouble with  
24 that. The only mention of it comes after he was  
25 provided with the Haddow report.

1 THE COURT: And that certainly can be the  
2 subject of cross-examination. I'm going to listen  
3 to foundational testimony. But the only thing that  
4 I can say that won't be allowed is what I've  
5 mentioned, the talk about what should have been  
6 done and that kind of thing.

7 MS. DO: And the Daniel P?

8 THE COURT: Right. And Mr. Hughes has agreed  
9 with that. So that won't be part of this either.

10 We do need to get the trial started. I  
11 need to take a conference call.

12 Thank you.

13 (Recess.)

14 (Proceedings continued in the presence of  
15 jury.)

16 THE COURT: The record will show the presence  
17 of the defendant, Mr. Ray, all of the attorneys,  
18 and the jury.

19 Good morning.

20 And, Mr. Hughes, you may call the next  
21 witness.

22 MR. HUGHES: Thank you, Your Honor. The state  
23 calls Dr. Dickson.

24 THE COURT: Okay.

25 MS. POLK: Your Honor, may we briefly

1 approach?

2 THE COURT: Okay.

3 (Sidebar conference.)

4 MS. POLK: The jury doesn't have their  
5 notebooks.

6 (End of sidebar conference.)

7 THE COURT: That's what they were discussing  
8 this morning. So let's go ahead and do those.

9 THE CLERK: Should we swear in the witness?

10 THE COURT: We'll do that.

11 Dr. Dickson, would you please raise your  
12 right hand and be sworn by the clerk.

13 MATTHEW DICKSON,  
14 having been first duly sworn upon his oath to tell  
15 the truth, the whole truth, and nothing but the  
16 truth, testified as follows:

17 THE COURT: And, sir, if you'd please be  
18 seated here to my right.

19 And then Ms. Rybar will go and get the  
20 notebooks that the jury started telling me about a  
21 minute ago. And we'll sit here quietly for a  
22 moment.

23 Duly noted.

24 (Pause in proceedings.)

25 THE COURT: Dr. Dickson, if you would please

1 start out by stating and spelling your full name.

2 THE WITNESS: Matthew, M-a-t-t-h-e-w; Dickson,  
3 D-i-c-k-s-o-n.

4 THE COURT: Thank you.

5 Mr. Hughes.

6 MR. HUGHES: Thank you.

7 DIRECT EXAMINATION

8 BY MR. HUGHES:

9 Q. Doctor, can you tell us what you do for a  
10 living.

11 A. I'm an emergency medicine physician at  
12 Yuma Regional Medical Center.

13 Q. And how long have you been a physician?

14 A. Since 2000. So 11 years.

15 Q. Can you walk us through your -- your  
16 education to become a physician.

17 A. Well, it's four years of college, four  
18 years of medical school, and then four years of  
19 residency, which you do specialty training. Did an  
20 internship followed by a three-year residency in  
21 emergency medicine.

22 Q. And where did you do your undergraduate  
23 education at?

24 A. University of California at Santa Cruz.

25 Q. And where did you, then, go to medical



1 school?

2 **A. Western University of Health Sciences.**

3 **Q.** And can you tell us where you did your  
4 internship at.

5 **A. At Kern Medical Center. It's one of**  
6 **UCLA's programs in Bakersfield, California.**

7 **Q.** And where did you do your residency?

8 **A. Same place. One of UCLA's programs, Kern**  
9 **Medical Center.**

10 **Q.** And can you explain for us the difference  
11 between an internship and a residency.

12 **A. They're, essentially, the same thing.**  
13 **Your first year of internship is a -- is the -- the**  
14 **first year of residency is your internship.**  
15 **Emergency medicine residencies come in three**  
16 **flavors. There is a one through three, a two**  
17 **through four, or a one through four. So it just**  
18 **depends on what you match. And so mine was a two**  
19 **through four, so they required an internship before**  
20 **you go there.**

21 **Q.** And are you currently employed as a  
22 physician?

23 **A. Yes.**

24 **Q.** And can you tell us where you're employed  
25 and what your duties are as a physician.

1 **A. I'm employed at Yuma Regional Medical**  
2 **Center in Yuma, Arizona. I'm the -- one of the**  
3 **attending physicians. I'm also the EMS medical**  
4 **director. I run the -- I'm the medical director**  
5 **for our county's emergency medical system, the**  
6 **paramedics, the first responders.**

7 **Q.** And how long have you been the EMS  
8 medical director in Yuma?

9 **A. Five years.**

10 **Q.** And can you tell us, do you -- your  
11 medical degree, is that a -- can you tell us what  
12 your medical degree is.

13 **A. I'm a DO, a doctor of osteopathic**  
14 **medicine.**

15 **Q.** And can you tell us -- we've had some  
16 testimony from a -- from a physician with an MD.  
17 Can you tell us the difference between a medical  
18 degree with the DO as opposed to an MD.

19 **A. Not a lot. In medical school you spend**  
20 **an extra couple of hours a week working on the**  
21 **musculoskeletal system. Like, once -- once that's**  
22 **over, it depends on what you decide to practice.**  
23 **In emergency medicine I don't use a lot of that.**

24 **Q.** As a -- as a DO, then, you had some  
25 additional training in the musculoskeletal system?

1 **A. Correct.**

2 **Q.** And can you tell us, then, what emergency  
3 medicine is.

4 **A. It's what it sounds like. It's the**  
5 **practice of emergency medicine. And I work in the**  
6 **ER. That's my office. Basically, you see**  
7 **everything that comes in the door. The acute --**  
8 **acute care of patients.**

9 **Q.** And do you have any board certification?

10 **A. I'm board certified in emergency**  
11 **medicine. I also run a hyperbaric chamber and**  
12 **wound care center. I'm also board certified in**  
13 **hyperbaric medicine as well.**

14 **Q.** And who do you have your board  
15 certifications?

16 **A. The American Board of Emergency Medicine,**  
17 **which is under the American Board of Medical**  
18 **Specialties.**

19 **Q.** And what do you have to do to become a  
20 board certified physician?

21 **A. You have to do a residency, then take a**  
22 **test. And then there's continuing education every**  
23 **year. And then you recertify every 10 years.**

24 **Q.** And how long have you been board  
25 certified in emergency medicine?

1 **A. I finished my residency in 2004 and took**  
2 **the test and was board certified in 2005.**

3 **Q.** And how long have you been board  
4 certified in hyperbaric medicine?

5 **A. Two years.**

6 **Q.** Do you -- do you have any medical or  
7 other professional licenses?

8 **A. Medical I don't think so. Just Arizona**  
9 **and California.**

10 **Q.** Okay.

11 **A. That's where I'm licensed.**

12 **Q.** Let me ask you that. What states are you  
13 licensed to practice medicine?

14 **A. Arizona and California.**

15 **Q.** And how long have you been licensed to  
16 practice medicine in those two states?

17 **A. Arizona for 7 years and California 10**  
18 **years.**

19 **Q.** And do you have any hospital privileges?

20 **A. Yes. Yuma Regional Medical Center.**

21 **Q.** And can you tell us what hospital  
22 privileges are.

23 **A. The privilege to practice medicine in the**  
24 **hospital.**

25 **Q.** And this may seem like a silly question.

1 But have you ever treated patients on a  
2 professional basis?

3 **A. Yes.**

4 **Q.** And do you have any idea how many  
5 patients you've treated to this point in your  
6 career?

7 **A. Thousands.**

8 **Q.** And at what hospitals have you treated  
9 patients?

10 **A. My residency was at Kern Medical Center.**  
11 **And I treated patients there. I did a little bit**  
12 **of what's called "moonlighting," where you work as**  
13 **a -- as a doc during your residency. That's Tulare**  
14 **Regional Medical Center, which is in Tulare,**  
15 **California. And then the rest has been Yuma**  
16 **Regional.**

17 **Q.** And as part of your professional duties,  
18 have you ever had the opportunity or been called  
19 upon to determine causes of death based upon  
20 reviewing patients' medical records?

21 **A. Yes. I'm the emergency department**  
22 **representative for quality committee at our**  
23 **hospital. So it's a continuous process of quality**  
24 **improvement. And we need to look at things, such**  
25 **as deaths, to determine the cause.**

1 **Q.** And how would you go about making a  
2 review as part of that committee?

3 **A. You're mostly reviewing medical records**  
4 **and discussing with physicians what their -- and**  
5 **nurses what they saw as well as other -- I guess**  
6 **you would say the patients' opinions of what**  
7 **happened.**

8 **Q.** And I believe I asked you about emergency  
9 medicine. Can you tell us -- you mentioned the  
10 hyperbaric medicine. What is that?

11 **A. Hyperbaric medicine is, basically, what**  
12 **you -- it started out with dive patients, people**  
13 **that are drivers. They can sometimes get the**  
14 **bends. I don't know if you've heard of that. It's**  
15 **people that go down and then come up too quickly.**  
16 **Hyperbaric oxygen -- or hyperbaric medicine was**  
17 **used to actually pressurize these patients so they**  
18 **cannot get so sick.**

19 **Nitrogen toxi- -- nitrogen narcosis is**  
20 **something else that divers get. They get, like,**  
21 **too much nitrogen. It is used now -- we use it**  
22 **predominantly for nonhealing wounds. People with**  
23 **diabetes that have wounds on their legs that won't**  
24 **heal, it's a very effective tool for that.**

25 **Q.** And does hyperbaric medicine, then,

1 involve at least in part a study of the gases that  
2 are in the blood?

3 **A. Absolutely. And some of the other things**  
4 **it's used for is for things like carbon monoxide**  
5 **poisoning. You can put them in a chamber, and it**  
6 **cures them a lot faster than the regular**  
7 **treatments. And definitely you've got to know**  
8 **about gas exchange for it.**

9 **Q.** You mentioned that you've treated  
10 thousands of patients. Do you have any idea how  
11 many thousands you've treated?

12 **A. Well, let's see. I have 20 patients a**  
13 **day on average. I probably work 150 days a year**  
14 **for 11 years. That's a lot.**

15 **Q.** Okay. And I became a lawyer so I didn't  
16 have to do a lot of math. And so I won't figure  
17 that out for you. But can you -- do you have any  
18 idea -- have you ever treated patients who have  
19 suffered from heat-related illnesses?

20 **A. Yes.**

21 **Q.** And I imagine down in Yuma you -- you'll  
22 see that from time to time?

23 **A. Very frequently.**

24 **Q.** And do you have any idea how many  
25 patients you've treated that have suffered from

1 some sort of heat-related illness?

2 **A. Probably 20 to 30 that I personally see a**  
3 **year -- a summer.**

4 **Q.** And of those, do you have an idea how  
5 many patients you've seen that have suffered from  
6 nonexertional heat stroke?

7 **A. Probably, I'd say, a third of those.**

8 **Q.** Have you ever treated a patient for  
9 hypercapnia?

10 **A. Yes.**

11 **Q.** And do you have an idea how many you've  
12 treated?

13 **A. Probably in the hundred range -- hundred**  
14 **or 200 range. It's a pretty common problem.**

15 **Q.** And have you ever treated patients for  
16 exposure to organophosphates?

17 **A. Yes.**

18 **Q.** And do you have any idea how many you've  
19 treated?

20 **A. Probably -- it's not that frequent, but**  
21 **we do have a lot of farming in our community. So**  
22 **probably about 10, I'd say.**

23 **Q.** Is that 10 per year or 10 total?

24 **A. Probably 10 total.**

25 **Q.** You mentioned you have a lot of farming.

1 Is there some sort of a common denominator in the  
 2 patients that you've seen that have come to the  
 3 emergency department for organophosphate poisoning?  
 4 **A. Yeah. They're normally farm workers.**  
 5 **Another -- we had a -- actually, we've had several**  
 6 **incidents where a couple of years ago when the --**  
 7 **oh. We had military down by the border, and some**  
 8 **of them were actually sprayed by some of the -- the**  
 9 **helicopters or the planes that were spraying crops.**  
 10 **Those were the bigger exposures that we've seen.**  
 11 **Q. And the farm workers. Do you know how**  
 12 **they came to be exposed?**  
 13 **A. Generally just from handling it.**  
 14 **Q. And would those be industrial**  
 15 **organophosphates that they were using?**  
 16 **A. Yes. They're industrial.**  
 17 **Q. Have you ever treated a patient for**  
 18 **exposure to home organophosphates?**  
 19 **A. What -- people that were exposed to it.**  
 20 **But the symptoms are normally pretty minimal due to**  
 21 **the low concentrations that you see in home**  
 22 **organophosphates. The stuff that you buy at Home**  
 23 **Depot doesn't have a lot of organophosphate in it**  
 24 **because of the -- because of the risk of poisoning.**  
 25 **Q. And were you actually involved in this**

1 particular case as a treating physician?  
 2 **A. No.**  
 3 **Q. How is it that you came to be involved in**  
 4 **this case?**  
 5 **A. I was asked to -- to -- I was somebody**  
 6 **who does a lot of teaching with our EMS, our first**  
 7 **responders, in heat illness. And somebody said --**  
 8 **they said, would you be interested in doing this?**  
 9 **Q. Are you working as a paid expert, then,**  
 10 **in this case?**  
 11 **A. I am.**  
 12 **Q. And how much are you being paid?**  
 13 **A. \$400 an hour.**  
 14 **Q. And do you have an idea how much time**  
 15 **you've put into this case to this point as an**  
 16 **expert?**  
 17 **A. About 20 hours so far.**  
 18 **Q. And do you have a retainer agreement with**  
 19 **the state?**  
 20 **A. Yes.**  
 21 **Q. A written agreement?**  
 22 **A. Written agreement. Yes.**  
 23 **Q. And you say you've put about 20 hours in.**  
 24 **Can you tell us in general the work that you've**  
 25 **done to this date, what -- what you've done over**

1 those 20 hours.  
 2 **A. I've reviewed medical records, reviewed**  
 3 **the witness reports, reviewed some reports from**  
 4 **other physicians in the case.**  
 5 **Q. And as a result of the work that you've**  
 6 **done, have you reached some opinions as to the**  
 7 **cause of death of James Shore, Kirby Brown, and Liz**  
 8 **Neuman?**  
 9 **A. Yes.**  
 10 **Q. And I'll -- I'll get to those. Can you**  
 11 **tell us, then, Doctor, turning to heat-related**  
 12 **illness, what are the different heat-related**  
 13 **illnesses that you might see as an emergency room**  
 14 **doctor?**  
 15 **A. That's a great question. Heat illness is**  
 16 **something that they talk a lot about because of --**  
 17 **Can I talk to them?**  
 18 **Q. Yes. Absolutely.**  
 19 **A. I'm sorry.**  
 20 **Heat illness is something that I talk a**  
 21 **lot about because of -- of where we are. Yuma,**  
 22 **Arizona. I don't know if you're familiar with it.**  
 23 **It's hot. It's a -- you know -- the average summer**  
 24 **temperature high is 107.**  
 25 **And as an EMS medical director, I get to**

1 **teach all of our first responders, whether they're**  
 2 **the paramedics, fire fighters, police. We have a**  
 3 **Marine Corps air base there, also an Army base.**  
 4 **And I get to teach their medics too.**  
 5 **And it's something that I think is very**  
 6 **important because a lot of our -- first of all, our**  
 7 **first responders are exposed to heat illness. And**  
 8 **so I like for them to understand heat illness and**  
 9 **its symptoms predominantly so they can recognize it**  
 10 **in themselves. That's one of the biggest things**  
 11 **that we see in our emergency department is fire**  
 12 **fighters unfortunately succumb to heat illness**  
 13 **quite frequently.**  
 14 **And our first responders are border**  
 15 **patrol. They're exposed to a lot of this. And I**  
 16 **want them to be able to recognize it in themselves**  
 17 **and in their -- in their -- their partners when**  
 18 **they're out there.**  
 19 **So back to your question about the types**  
 20 **of heat illness. They break it up into two**  
 21 **categories. Heat illness is either exertional heat**  
 22 **illness or classic heat illness. An exertional is**  
 23 **what you think about it. It's exerting yourself.**  
 24 **We see a lot of people like the -- the football**  
 25 **players. They used to call it "double days" when I**

1 was in -- in high school.

2 The football players got to do the -- the  
3 double days. They had to put on their pads and  
4 practice in the morning and practice in the  
5 afternoon. That's when they're really exerting  
6 themselves.

7 But in August in Yuma, it's -- you  
8 know -- 110 degrees. And plus it starts to get  
9 actually humid. So we see a lot of people, a lot  
10 of young students that way.

11 That's the classic exertional heat  
12 stroke. People start presenting -- or -- or heat  
13 illness. They start presenting with muscle cramps,  
14 nausea, vomiting. And one of the scary things  
15 about heat illness is if you don't stop it -- stop  
16 whatever you're doing, whether it's exertional or  
17 not, and start cooling down, you can progress to  
18 what's called "heat stroke."

19 And heat stroke is -- is the bad one.  
20 And that's where people die. Once you've crossed  
21 that line into heat stroke from heat exhaustion,  
22 you're in big trouble. You start to die. Of  
23 mortality rates, meaning the people that are going  
24 to die, can go from anywhere from 10 to 80 percent.  
25 So when you think about an 80 percent chance of --

1 of dying, it's a -- it's a scary thing.

2 And so I try to educate people on their  
3 symptoms. When they are working out, when they're  
4 playing football, whatever they're doing, whether  
5 they're at a fire, when they start feeling muscle  
6 cramps, feeling weak, feeling nauseous, stop now  
7 while you're okay before you progress to heat  
8 stroke.

9 The problem with -- when you go to heat  
10 stroke, one of the cardinal signs of heat stroke is  
11 you get a change in mental status. And that's  
12 tough because if you're the one who's changed in  
13 mental status, you're not going to recognize this  
14 isn't right. And the change in mental status can  
15 be subtle. It can be someone just making a bad  
16 decision.

17 I teach our paramedics to watch their  
18 partners. If they're -- if they're -- they're  
19 taking care of a patient and all of a sudden their  
20 partner starts doing things that just medically  
21 aren't right, well, pay attention to that. Because  
22 now they've stepped into that heat stroke realm.

23 And it can become more serious. It can  
24 come into they can act intoxicated. They can be  
25 violent. They can have seizures, or they can be in

1 a coma and look dead. It can go all the way, the  
2 whole spectrum.

3 So that's kind of the progression of --  
4 of heat illness. It can start with a mild disease  
5 where you have to recognize the symptoms. But then  
6 when you get to that point where you're now in heat  
7 stroke, you're in trouble, and you have those  
8 changes in mental status, which you really have to  
9 treat these people aggressively.

10 So backing up a little bit, where we  
11 talked about exertional heat illness, there is also  
12 the classic heat illness. And that's where you  
13 hear, like, in the -- in New York and Chicago when  
14 they have these big heat waves, and you hear all  
15 these people die. And that is -- it's kind of a  
16 different population.

17 Generally, it's an elderly population  
18 because they might not have the -- some of them  
19 don't have the resources or the -- sometimes there  
20 is dementia, Alzheimer's, and they might not have  
21 the capacity to go, hmm. It's too hot in my  
22 apartment. The power is out. It's 110 degrees. I  
23 need to get to someplace cool. And those are the  
24 ones where you see a lot of deaths in -- the big  
25 deaths of heat illness.

1 Again, it's the same sort of symptoms,  
2 but you have to be able to recognize it when  
3 it's -- when you start out. For example, your  
4 power goes out, and it's 110 degrees, and you're  
5 not -- you're realizing, gosh. I'm feeling  
6 nauseous. I'm feeling sick. I better do something  
7 about this.

8 You've got to cool down. And if you  
9 don't cool down, you're going to progress to that  
10 heat stroke. And the heat stroke is when you start  
11 having that mental status changes. And the problem  
12 is is if you're alone or you're with people that  
13 are in that same predicament, several people in an  
14 apartment or in a -- or in a house that don't have  
15 air-conditioning, they're not going to recognize it  
16 among each other that something is not right, and  
17 they can progress to death.

18 So those are the two, exertional and  
19 classic heat illness, the two categories they are.

20 Q. And, Doctor, you mentioned with heat  
21 stroke you can start to see mental status changes,  
22 maybe ranging from making a bad decision on to you  
23 mentioned comatose or death.

24 Can you explain a little bit. At some  
25 point does the mental status changes that you

1 see -- is that referenced in anywhere and to  
2 correlate with the severity of the heat stroke that  
3 the person is suffering from?

4 **A. Well, if you're unconscious, you're not**  
5 **going to do as well as somebody that's just acting**  
6 **a little goofy. I mean, generally the people that**  
7 **have gotten all the way to unconscious and then if**  
8 **they don't wake up quickly so somebody is -- one of**  
9 **the things we -- we teach is to treat these**  
10 **patients. Get them cool very, very quickly, the**  
11 **people that have gone to heat stroke.**

12 **The longer you wait to cool them down,**  
13 **the much worse they're going to do. If you wait**  
14 **more than an hour or two, their chance of death**  
15 **goes way up. So the sooner you cool them, the**  
16 **better they're going to do.**

17 **So people that are unconscious definitely**  
18 **do worse. But if you can get to them early and you**  
19 **can cool them off and they wake up, it's a great**  
20 **sign.**

21 **It's the ones that the paramedics have**  
22 **done a great job. They've tried to cool them.**  
23 **They've given them I.V. fluids. They've got the**  
24 **air-conditioning on. They're fanning them.**  
25 **They're trying to really cool them down. And they**

1 **don't wake up by the time they get to the ER. And**  
2 **we're able to do our thing trying to cool them**  
3 **down, and they're not waking up. And it's been**  
4 **three or four hours despite we've gotten their**  
5 **temperature down, it's not -- it's not a good sign**  
6 **when that happens.**

7 **Q. How would you typically try and cool a**  
8 **patient who arrives at the emergency department**  
9 **suffering from heat stroke?**

10 **A. Do you want the whole -- I'll give you --**  
11 **you're going to get a whole lecture on heat**  
12 **illness.**

13 **There's four ways people get rid of heat.**  
14 **There is conduction, which is, basically, you're**  
15 **conducting heat. If you put ice packs on your**  
16 **groin, on your face -- you know -- you're trying to**  
17 **cool yourself out. And that's one of the**  
18 **techniques we use.**

19 **The problem is if it's hotter outside and**  
20 **you don't have ice packs, it's not really going to**  
21 **help you. One of the problems we have in Yuma is**  
22 **when you have a patient -- or somebody that's out**  
23 **in the heat, most of the ways to cool yourself off**  
24 **are not effective.**

25 **There is a radiative heat loss. You're**

1 **always giving off electromagnetic rays, waves, and**  
2 **you're radiating heat. That's actually one of the**  
3 **best ways to get rid of heat. You get rid of 65**  
4 **percent of your body's heat that way. But if it's**  
5 **107 outside and your body is 98, you're not giving**  
6 **off any heat.**

7 **One of the best things that we do is when**  
8 **it's not humid -- because fortunately in Yuma it's**  
9 **not very humid. It's dry even in the monsoon**  
10 **season. It's -- if -- you know -- a humid day in**  
11 **Yuma is 40 percent humidity. We want to do**  
12 **evaporative cooling. And that's where we just,**  
13 **basically, put water on them and fan them. So if**  
14 **you're -- that's our best bet in Yuma in cooling**  
15 **these patients.**

16 **Q. Thank you for that explanation.**

17 **A. I don't know if I answered your question**  
18 **thoroughly enough.**

19 **Q. No. You did.**

20 **A. Okay.**

21 **Q. People who may have seen on TV placing a**  
22 **patient in an ice bath -- you know -- a bathtub**  
23 **full of ice cubes and water -- is that something**  
24 **that you frequently do in the emergency department?**

25 **A. We don't. It's a dangerous thing to do.**

1 **If you think about it, you've got somebody that's**  
2 **unconscious and they can't protect their airway,**  
3 **that's a big thing. You don't want to put somebody**  
4 **who is unconscious in a tub of water. If their**  
5 **head rolls underwater, they're going to get a bunch**  
6 **of water into their lungs. And that's a bad thing.**

7 **The things we generally do is we can use**  
8 **cold I.V. fluids. We fan them. It's 70 degrees in**  
9 **our ER -- or 65 degrees in the ER. So it's**  
10 **definitely cool. So we get to get radiative heat**  
11 **loss. We put ice on them.**

12 **We can do more invasive techniques. We**  
13 **can put a tube down into their stomach, and then**  
14 **you put in cold ice water and then success it back**  
15 **out. And then you just keep circulating cold water**  
16 **into their stomach.**

17 **You can also do things like putting it in**  
18 **their bladder to cool it down. You can put a**  
19 **catheter into their bladder and wash out their**  
20 **bladder with cold water. I know it sounds a little**  
21 **invasive. But these are patients that are really**  
22 **sick. And our goal is to treat them, cool them**  
23 **down very, very quickly.**

24 **Fortunately, most of our prehospital or**  
25 **EMS are so good at it that by the time they get to**

1 **us, they're mostly cool. They do a really great**  
2 **job of cooling them effectively and quickly.**

3 **Q.** You gave a hypothetical a moment ago  
4 about telling the -- a paramedic to keep an eye  
5 on -- on his partner or her partner to make sure.  
6 In that situation, let's say someone is starting to  
7 act a little -- a little sketchy, for example.

8 Does that person need immediate hospitalization, or  
9 is there ways that they can be treated maybe by  
10 their partner right then and there?

11 **A.** When you -- it's -- they talk about heat  
12 illness as heat exhaustion and heat stroke like  
13 they're two separate things. And they're really  
14 not. They're a continuum. If you're heading down  
15 that path of heat exhaustion, if you don't correct  
16 what you're doing, you're going to become heat  
17 stroke guaranteed.

18 And if you still don't correct it, you're  
19 going to die. So it is a separate -- they are on  
20 paper two separate entities. But they're really a  
21 continuum.

22 And the key mark on that where you jump  
23 from heat exhaustion, which most people do just  
24 fine with, to heat stroke is when you have those  
25 mental status changes. So when people exhibit

1 those mental status changes, that's the big red  
2 flag, hey. We've got to be really aggressive with  
3 these people. We really got to check them out.

4 So I would definitely not recommend  
5 somebody that's having signs of heat stroke, that  
6 change in mental status, to -- to be treated  
7 just -- without seeing a doctor.

8 **Q.** If they -- if they were taken someplace  
9 cool and they were still in that early stages where  
10 it's mild mental status changes, would you expect  
11 without hospital care and just with cooling that  
12 they could get better?

13 **A.** It's possible.

14 **Q.** Do you know what the criteria are for  
15 diagnosing heat exhaustion in a hospital setting?

16 **A.** Well, it's a -- it's a clinical  
17 diagnosis. What that means is there's not a magic  
18 test for it. There is not a blood test that we can  
19 say this is heat exhaustion, this is heat stroke.  
20 I wish there was, but there is not.

21 And so the criteria are, basically, if  
22 you're having the -- the -- if somebody has been  
23 exposed to heat, so you've got just look at the  
24 scenario.

25 So the -- the guy was stuck in a -- you

1 know -- an elderly lady was stuck in a mobile  
2 home without air-conditioning, and the paramedic  
3 said, wow. I went in there and it was really,  
4 really, really hot, and she was not acting  
5 appropriately. Just giving you an example. You've  
6 got to think that this is -- this is heat illness.

7 Heat exhaustion, the separating point is  
8 there are temperatures that people use. The  
9 classic temperature they use -- it's all over the  
10 map in the literature. But the classic temperature  
11 is 104 degrees. They say below 104 is heat  
12 exhaustion and above is heat stroke. But  
13 unfortunately in practice that really doesn't work.

14 One of the big reasons is getting that  
15 temperature. That's a core temperature, meaning  
16 it's a rectal thermometer. And they don't really  
17 do that in the prehospital setting very often.

18 So it's more on a clinical. What do they  
19 look like? Is somebody just having nausea,  
20 vomiting, some muscle cramps? That's heat  
21 exhaustion. If they're having mental status  
22 changes, that's heat stroke.

23 **Q.** And you mentioned a temperature. At what  
24 point are you looking for the temperature?  
25 Assuming you could get one, is it at the -- at the

1 point of exposure to the heat or after exposure to  
2 the heat?

3 **A.** It's at the point of exposure. And  
4 that's the challenge in all these is -- you know --  
5 what is the temperature when they were hot? And  
6 people cool quickly, thank goodness. But if you  
7 can be very aggressive, you can cool these people  
8 very quickly.

9 **Q.** You mentioned the -- the rectal  
10 temperature or core temperature. Are there other  
11 ways that -- that people have their temperature  
12 taken?

13 **A.** Yeah. Most of the time, they do what's  
14 called a "tympanic membrane" or an ear temperature.  
15 I'm going to go to the doctor, and it's much nicer  
16 than having to put a thermometer under your tongue.  
17 They can do an ear temperature.

18 Unfortunately, it's -- in the setting of  
19 heat -- heat illness, it's not a reliable method of  
20 taking the temperature.

21 **Q.** And why is that?

22 **A.** Well, it's -- supposedly it's supposed to  
23 go to your tympanic membrane or your eardrum. And  
24 it all depends on how it's pointed. Because if  
25 it's just -- if they point it right at your eardrum

1 or if they point it to the side, it might not get  
2 the right temperature.

3 And there has been great studies on this  
4 years -- from years and years and years of studies  
5 on this. And there's been -- one of the most  
6 recent one was they took a bunch of volunteers, or  
7 people. They put them all -- or had them exercise  
8 with a core temperature, a rectal thermometer. And  
9 then they measured their temperature. They  
10 measured them with the ear, and then they measured  
11 with a rectal temperature.

12 And their temperatures went up together  
13 pretty well. So the ear temperature and their core  
14 temperature went up well together. But as they  
15 started cooling down, the tympanic membrane or the  
16 ear temperature dropped, but the core temperature,  
17 the rectal temperature, stayed high for a lot  
18 longer. So it doesn't correlate well in this  
19 setting.

20 It can do well for kids. Pediatrics it  
21 works well. That's why you see it a lot in  
22 pediatric departments. But in the setting of heat  
23 stroke, it just doesn't work very well.

24 Q. And there has been some testimony  
25 previously about a temperature taken underneath

1 somebody's arm.

2 A. Yeah.

3 Q. And is that something that you would  
4 consider reliable in the heat-related illness  
5 setting?

6 A. Unfortunately no. It's -- the problem is  
7 is the physiology of it. When you start to cool or  
8 heat your veins and arteries, then your skin can  
9 dilate or they can contract. And depending on  
10 where you are in that, the temperature can be off.

11 So you really want to know the core  
12 temperature. And that's what's affecting people.  
13 Their skin is not affecting them. It's what's --  
14 what's inside. It's their heart. It's their  
15 brain. You want to know what's happening to that,  
16 not their finger. So --

17 Q. Doctor, would you consider a temperature  
18 taken 45 minutes or more after the removal from the  
19 heat source to be something that would be reliable  
20 in trying to assess heat-related illness?

21 A. That's a good question. And this is what  
22 we commonly see is I don't really rely on  
23 temperatures because our EMS is so good at cooling  
24 people down. Nine times out of 10, they're cool --  
25 actually, they're hypothermic, meaning they've

1 gotten them colder that they're supposed to be.

2 They tell you actually to stop cooling  
3 when they to about 102. Because the odds are  
4 you're going to overshoot, and you're going to end  
5 up getting them too low. So you have to be  
6 careful. It's not a -- it's not a reliable  
7 indicator.

8 It would be a -- it would be a mistake to  
9 base your treatment based on the temperature. If  
10 you said, wow. They're hypothermic and they're  
11 altered and they're not acting appropriately, to  
12 think this isn't heat illness. You have to look at  
13 the history. Were they exposed to heat? Was that  
14 an obvious diagnosis?

15 Q. Is dehydration a necessary component of  
16 nonexertional heat stroke?

17 A. It's not necessary. It can happen, and  
18 in dehydration, it makes sense. If you're hot,  
19 what do you do? You sweat. You're going to get  
20 dehydrated. What I -- one of the common things we  
21 see is we see patients go into the river. We have  
22 the Colorado River just -- just north of Yuma where  
23 people recreate.

24 And I've had a couple of patients,  
25 actually repeat patients, that -- I had this one

1 lady that came in. She came in and she got sick.  
2 It was 110. She was having nausea, vomiting,  
3 muscle cramps, not feeling well. She said, well, I  
4 drank the whole time.

5 But unfortunately when it's 110, you can  
6 be hydrated, but that water that you're drinking is  
7 110. So unfortunately they're not mutually  
8 exclusive. You can be hydrated and still have heat  
9 illness.

10 The flip side of that is if you are  
11 dehydrated, it can make heat illness worse. It can  
12 make you more susceptible to it. The reason being  
13 is what you're body does to help cool is it dilates  
14 all those arteries and veins in your skin so you  
15 can radiate some of that heat off. Okay?

16 But you need to pump a lot more fluid,  
17 and you need more volume, and your heart's got to  
18 work harder. But if you're -- if you're heart  
19 isn't the best, and now you've got to pump a lot  
20 harder, especially in elderly patients, that can be  
21 very bad for your heart. And that's why some  
22 people, when they're dehydrated, they get worse.

23 Q. You mentioned a hypothetical a couple of  
24 minutes ago about a person in an apartment, and the  
25 power goes off, and it's 110 out

1 What sort of temperature can cause heat  
2 stroke to come into play for an otherwise healthy  
3 person who is exposed to that temperature in a  
4 nonexertional setting?

5 **A. Well, if it's above 98.6, you're going to**  
6 **get hot. And that's the -- that's the -- that's**  
7 **the temperature that we are at when you start**  
8 **getting 100, 103, 104. I don't know if you've ever**  
9 **been in a hot tub. But when we set our hot tub at**  
10 **104, I'm cooking, so I can't really stay in that**  
11 **for much longer.**

12 **Q. Can humidity play a role in heat stroke?**

13 **A. Absolutely. We talked a little bit about**  
14 **this, the -- the four ways that you can cool. If**  
15 **you're -- if you're in a hot environment, one is**  
16 **you can get conductive heat loss. You can put cool**  
17 **things on you. If -- if you don't have anything**  
18 **cool on you, you're going to gain heat if it's hot**  
19 **outside.**

20 **You can have radiative heat loss. And**  
21 **that's where if it's cooler outside than your body,**  
22 **you can radiate heat off. But, again, if it's**  
23 **hotter than your body, you can't do that.**

24 **You can have convection. And that's**  
25 **another thing. I know you've heard of convection**

1 **ovens. They're always circulating heat around.**  
2 **They kind of circulate heat around the food. And**  
3 **that's -- that's a way -- if it's hotter outside**  
4 **than you are, you are not going to be able to**  
5 **radiate heat.**

6 **The thing that we use in Yuma is**  
7 **evaporative heat loss. And that's because we have**  
8 **low humidity. If it is very, very hot, like on the**  
9 **East Coast when these people in Chicago and**  
10 **New York have these heat waves, it's normally**  
11 **99 degrees and 99 percent humidity. They lose that**  
12 **ability to cool too because you have to sweat.**

13 **And when you sweat, you have to have**  
14 **evaporation of the sweat. It won't evaporate if**  
15 **it's 99 percent humidity. So that ability to cool**  
16 **is lost too. So, basically, if it's hot and humid,**  
17 **you're out of luck.**

18 **Q. Can exposure, then, to extreme heat and**  
19 **extreme humidity speed up the process or the rate**  
20 **that a person would begin to suffer from a**  
21 **heat-related illness?**

22 **A. Yes. You just have no way to cool.**

23 **Q. And can you tell us, then, what the signs**  
24 **and symptoms you would see in a patient who was**  
25 **suffering from nonexertional heat stroke.**

1 **A. Essentially, the same as for exertional**  
2 **and nonexertional. All the signs of heat**  
3 **exhaustion, which are a concern. You kind of seem**  
4 **like you've got the flu. You've got -- you can**  
5 **have muscle cramps. You just don't feel right.**  
6 **Nausea, vomiting, diarrhea. Those sort of symptoms**  
7 **can up come.**

8 **But then when you flip over to the key**  
9 **symptoms in -- in heat stroke -- I'm -- I'm just**  
10 **talking on physical exam. This is the way that**  
11 **you're just looking at this having heat stroke.**  
12 **They're going to have mental status changes. And**  
13 **that's the big difference.**

14 **Now, when we do tests, there are things**  
15 **that can be -- that we can find in heat stroke that**  
16 **you don't find in heat exhaustion. And those tests**  
17 **can show us problems with their kidneys, problems**  
18 **with their liver, problems with their heart.**  
19 **They're called "end organs." You're end organs are**  
20 **your main organs: -- your heart, your kidneys,**  
21 **your brain.**

22 **Your brain is something that you can see.**  
23 **All of us can see how someone's brain is working**  
24 **just by looking at them. You don't need a blood**  
25 **test to say, hey, their end organ, their brain, is**

1 **being affected. They're acting not right.**

2 **Whereas, the kidney tests, the liver**  
3 **tests, I can't tell just by looking at you. But**  
4 **you can do it by blood work.**

5 **That's the thing that I try to teach our**  
6 **first responders is that the brain is the end organ**  
7 **you can see. And when that's affected, you got**  
8 **problems. You need to look out for that.**

9 **Q. How can heat affect the brain and the**  
10 **other organs in the body?**

11 **A. That's a good question. There's a lot of**  
12 **theories on that. The main area is that you get**  
13 **swelling, and then the cells start to die. You can**  
14 **leak fluid out into your brain. You can leak fluid**  
15 **into your lungs. Your kidneys shut down.**

16 **One of the theories is that people can go**  
17 **into something called "DIC." What -- what that is**  
18 **is it's disseminated intravascular coagulation.**  
19 **And what that is is from the heat -- your arteries**  
20 **have linings. They're just tubes. They're like**  
21 **hoses. But the heat starts to melt the lining of**  
22 **that hose.**

23 **And so your body says, we've got holes.**  
24 **I've got to plug -- we've got to plug those holes.**  
25 **And so your body -- your body starts clotting and**



1 **plugging up all those holes in the arteries.**  
 2 **Unfortunately your whole body doesn't**  
 3 **have enough clotting factors and platelets to plug**  
 4 **every hole. And then it uses it all up, and then**  
 5 **you start to bleed from everywhere.**

6 **So that's one of the late findings in --**  
 7 **in heat stroke from the heat. And it hurts that**  
 8 **lining of the hose, or your tubes, your arteries**  
 9 **and veins, and then they start to leak.**

10 **Q.** We've -- and you've mentioned some of the  
 11 other organs in the body that there are some tests  
 12 that can determine if those organs have been  
 13 injured. Can you tell us what -- what those organs  
 14 are and the sort of tests that could look for  
 15 injury to those organs.

16 **A.** One of the things are kidneys. There is  
 17 something called your "BUN" and "creatinine." They  
 18 are markers to see if there's been any damage to  
 19 your kidneys. If your BUN and creatinine are high,  
 20 it means your kidneys have taken a hit.

21 **There are markers for your heart.**  
 22 **They're called "cardiac enzymes." They're -- one**  
 23 **of them is called "troponin." You don't have a**  
 24 **troponin that's elevated in your blood in general**  
 25 **unless you've done some damage to your heart. If**

1 **you've had a heart attack, your troponin is going**  
 2 **to be high. People that have had damage to heart**  
 3 **muscle, that's what a heart attack does. But also**  
 4 **heat illness can damage your heart, and it can make**  
 5 **it go high.**

6 **Q.** Are those, then, elevated enzyme levels  
 7 for BUN, creatinine, troponin -- are those specific  
 8 findings for a heat stroke?

9 **A.** They can be for other things as well.

10 **Q.** What sort of other conditions could cause  
 11 elevated BUN or creatinine markers?

12 **A.** Oh, the list is long. Dehydration is a  
 13 common one. People that are dehydrated, the same  
 14 thing happens there. Their kidneys don't get  
 15 enough blood flow, and they start to get hurt.  
 16 There's medications that can hurt your kidneys.

17 **There's things called "autoimmune**  
 18 **diseases" where your -- your -- I don't know if**  
 19 **you've ever heard of lupus or these diseases where**  
 20 **your immune system attacks itself. It can attack**  
 21 **your kidneys. Diabetes can cause kidney disease.**  
 22 **The list is extensive.**

23 **Q.** And how quickly can those enzyme levels  
 24 or those markers in the blood elevate after a  
 25 person is exposed to extreme heat?

1 **A.** Pretty quickly.

2 **Q.** And how quickly can they -- do they ever  
 3 flush out of your body? If you're exposed and you  
 4 begin to suffer some effects from heat stroke and  
 5 you're removed from the source of the heat, can  
 6 those markers eventually move out or clear out of  
 7 your body?

8 **A.** That's the goal. Absolutely. They can  
 9 clear out. And it's normally with hydration.  
 10 **Basically, treat the problem. In any -- any kidney**  
 11 **disease, when you correct the problem, generally**  
 12 **people do -- do well. Unless they've been severely**  
 13 **hurt, it's been irreversible. That does happen.**

14 **Q.** And those markers. Is there an accepted  
 15 time that they would begin to start clearing out or  
 16 completely clear out of a body? Are we talking  
 17 minutes? hours? days?

18 **A.** In a day or two with -- with the right  
 19 treatment. I mean, if you -- if somebody has an  
 20 elevated creatinine because of dehydration, because  
 21 of heat illness, with aggressive fluids -- you give  
 22 them lots of I.V. fluids. If they're able to  
 23 drink, you have them drink fluids. You can  
 24 normally get them better in -- in a day or two.

25 **Q.** And if a person suffering from heat

1 stroke doesn't receive treatment after exposure for  
 2 some period of time to extreme heat, how quickly  
 3 can they actually die?

4 **A.** One more time for your question.

5 **Q.** If a person doesn't receive treatment,  
 6 how quickly can a person die from heat stroke?

7 **A.** Well, it's kind of what we talked about  
 8 earlier. Once you start down that path, you start  
 9 between heat exhaustion. You start having muscle  
 10 cramps. You start having nausea, vomiting. And  
 11 then you click that line where you start having  
 12 mental status changes. You're going down that path  
 13 of heat stroke. And you will go to death quickly,  
 14 in an hour.

15 **I mean, it -- it depends on how -- how**  
 16 **hot it is and their ability to cool, and if they**  
 17 **have preexisting conditions. If they're**  
 18 **dehydrated, if they have heart disease, if they**  
 19 **have other things, then they can die quicker.**

20 **So it depends how hot it is. If it's**  
 21 **just 100 degrees, you can last a lot longer than if**  
 22 **it's 120 degrees. It just depends on how hot it**  
 23 **is.**

24 **Q.** And, Doctor, have you seen patients in  
 25 Yuma who have been, say, trapped in a hot car in

1 the -- in the summer sun?

2 **A. Lots of times.**

3 **Q.** And what sort of symptoms would you see a  
4 patient like that presenting with in the emergency  
5 department?

6 **A.** It just depends on how far along they are  
7 down on the scale. Some people just start with  
8 they're nauseous and they're having muscle cramps.  
9 Those people do really well. You get them out of  
10 the hot environment, give them a nice glass of  
11 water and sit them in a cool corner, and they feel  
12 better.

13 The people that are -- have been in there  
14 for longer periods of time -- unfortunately had  
15 patients that are unconscious, unresponsive. We  
16 have to put them on a ventilator. We have to cool  
17 them aggressively. They go to our intensive care  
18 unit. And people die from this every year  
19 unfortunately. It just depends on -- on how fast  
20 they were gotten too.

21 The key in heat illness is to get to them  
22 quickly, stop them down that path -- going down  
23 that path, and get them cool and reverse it. The  
24 sooner you can do it, the better they'll do.

25 **Q.** Can you tell us how the effect to the

1 central nervous system that you talked about can  
2 affect a person or patient's Glasgow Coma score who  
3 is suffering from -- a patient suffering from heat  
4 stroke.

5 **A.** Do you want me to tell you what the  
6 Glasgow Coma Score is?

7 **Q.** Can you tell us what it is?

8 **A.** I'm sorry.

9 **Q.** And if you need to use the chart -- I  
10 know there are a couple of different numbers. If  
11 you can explain what those numbers mean.

12 **A.** I don't have very good writing, but I'll  
13 do it.

14 The Glasgow Coma Scale, also known as  
15 GCS. It's, basically, a scale from 3 to 15. 15 is  
16 all of us here. We're alert. We know where we  
17 are. We know what today's date is. We want -- we  
18 know what's happening. Three is somebody that's  
19 not responding at all. They are -- essentially,  
20 they might be breathing, but they're -- probably  
21 we're breathing for them on a ventilator.

22 And we base it on three categories -- eye  
23 opening, verbal, and motor. So eye opening. If  
24 they open spontaneously. I'll walk up to you and  
25 say hello, and your eyes are open. So that gives

1 you a full four points for that one.

2 **Verbal.** If you're -- let me go back  
3 down. If you -- If I have so say, sir, ma'am, wake  
4 up, then it's voice. And then they have to open  
5 their eyes. And you'll get one point less.

6 If I have to actually shake somebody or  
7 touch them to get them to open their eyes, then  
8 they get one point. And zero is they're not  
9 opening their eyes. Excuse me. Two. And then one  
10 point is only if they're -- if they don't open  
11 their eyes at all. So it's basically 4, 3, 2, or  
12 1.

13 Verbal is the same sort of thing except  
14 it's starts at 5. We are on a verbal of 5. We're  
15 talking with a person. You lose points as you go  
16 down. If you're making no sense -- people that are  
17 babbling lose points. People that are making  
18 incomprehensible sounds, just moaning, they lose a  
19 point, all the way down to not saying anything.

20 And then motor. Motor, you get 6. And  
21 it's out of 6 down to 1. If you're moving  
22 everything, you're talking, you're following  
23 commands, that gets you a 6. When you start moving  
24 things less purposefully, maybe things like just  
25 localizing the pain. If I squeeze your arm, you

1 would push it away from me. You know, you would  
2 say, stop that, and push it away. That's  
3 localizing the pain. All the way down to things  
4 called "posturing."

5 Posturing is when you're -- it's a  
6 deep-brain reflex. When you're in big trouble, you  
7 do this thing called the "decorticate posturing."  
8 They put their arms like this. Or decerebrate  
9 posturing. This is the next-to-bad one. The worst  
10 is decerebrate posturing. They do this. And then  
11 all the way down to you're not doing anything, just  
12 lying flat.

13 So heat illness can present anywhere on  
14 that Glasgow Coma Scale. They can present with a  
15 15. They can be 14, they start getting a little  
16 confused, all the way down to they're posturing.  
17 They can have -- or if they're doing this or this  
18 or they're not moving anything at all. So it can  
19 go anywhere on that scale.

20 **Q.** And at what Glasgow Coma Score does a  
21 patient's ability to control their airway become a  
22 risk?

23 **A.** Well, the classic sign is 8. That's  
24 where they teach us that when -- when somebody has  
25 a Glasgow Coma Scale of 8 or below, you generally

1 put them on a ventilator because you're afraid  
2 they're going to aspirate or get their own  
3 secretions or vomit or anything into their lungs.  
4 So 8 is the magic number that we use.

5 Q. And can that Glasgow Coma Score of 8 --  
6 can that affect their ability to control other  
7 functions of the body, say, controlling their  
8 bowels?

9 A. Absolutely. Yeah. People -- they will  
10 be incontinent of stool, urine. It -- it happens.

11 Q. And do you have an opinion of how quickly  
12 an untreated patient who is suffering from heat  
13 stroke can reach a lower Glasgow Coma Scale, say,  
14 of 8 or below?

15 A. If it's hot very, very quickly.

16 Q. And can you tell us whether -- can a --  
17 can a low Glasgow Coma Scale lead to something  
18 called "pulmonary edema"?

19 A. Yes. It can. Pulmonary edema is when  
20 you get fluid on your lungs. And there's many  
21 things that can cause pulmonary edema. But heat  
22 illness is one of the classic things that can lead  
23 to that.

24 We talked about the tubes earlier, the  
25 arteries, and the lining gets burnt and melts. The

1 same thing happens to the linings of your lungs.  
2 If you're breathing all that hot air in and if it's  
3 really hot, you actually -- you burn the lining of  
4 your lungs, and they start to leak.

5 Your lungs down at the microscopic level  
6 are -- there's arteries right against and next to  
7 the lungs so you can exchange gas back and forth  
8 between the -- the arteries and the air. But  
9 that's a very thin membrane, a little, thin area.

10 And when too much heat happens, gets too  
11 hot, you -- that fluid starts to leak out. The  
12 classic finding is this pink, frothy stuff that  
13 comes up. And that's called "pulmonary edema."

14 When that happens, your ability to  
15 exchange gas, to get oxygen to your blood and  
16 carbon dioxide out, doesn't exist anymore or it  
17 gets a lot worse.

18 Q. What are some of the other signs and  
19 symptoms that you might see when a patient  
20 suffering from heat stroke begins to suffer from  
21 pulmonary edema?

22 A. Well, the -- the ones that we -- I mean,  
23 they're breathing fast. They're breathing shallow.  
24 And -- and one of the classic findings is when you  
25 go to intubate them -- that's when we put a tube

1 into their throat -- you actually get to look down  
2 into their throat.

3 And you lie them back to do this, and up  
4 from their trachea comes this pink, frothy  
5 substance. You can watch it come up. You can see  
6 it on X ray as well sometimes. Depends on how bad  
7 it is. But those are the -- normally difficulty  
8 breathing. When you have fluid in your lungs, it's  
9 not a good thing.

10 Q. If a person is -- receives medical  
11 treatment before they progress to that stage of  
12 pulmonary edema, can you intubate them without  
13 seeing the pink, frothy sputum?

14 A. You definitely can. That's a late-stage  
15 finding.

16 Q. And can you explain what late-stage  
17 findings are.

18 A. Well, late stage is just like it sounds.  
19 It means you're getting towards the end.  
20 Likelihood of -- of dying is increasing.

21 Q. Can you tell us whether miosis, or  
22 pinpoint pupils, are something you might see in a  
23 patient suffering from heat stroke.

24 A. You can see big pupils or you can see  
25 little pupils. You can see normal pupils. You can

1 see any one of them.

2 Q. And what is that opinion based upon?

3 A. If you look at the research and what I've  
4 seen. The -- the medical research shows it.

5 Q. And can you explain some of the causes  
6 for having big pupils.

7 A. Well, there are substances that can --  
8 like anticholinergics that can make your pupils  
9 big. You can do -- certain recreational drugs --  
10 methamphetamines, cocaine -- can make your pupils  
11 big. Being really scared can make your pupils big.

12 You know, it -- it just depends on what  
13 your -- normally it's just substance related or --  
14 or a stroke or bleeding in the brain can cause that  
15 as well.

16 Q. And what are some of the things that can  
17 cause the pupils to become small or pinpoint?

18 A. The list is big as well. One of the most  
19 common things we see is narcotics. People that  
20 overdose, whether it's morphine or heroine. The  
21 classic one is they'll see very small pupils.

22 There are other cholinergic symptoms.  
23 They're -- those are the opposite of  
24 anticholinergic. Different medications that can  
25 cause pinpoint pupils, but they can also cause

1 large pupils. Fortunately, pupils -- pupils is a  
2 difficult one. There are some things that are  
3 classic and some that aren't.

4 Q. Do you have an opinion as to whether  
5 exposure to carbon dioxide can affect pupil size?

6 A. No. I don't have an opinion whether it  
7 causes pupil change.

8 Q. How about --

9 A. Carbon dioxide or carbon monoxide?

10 Q. Carbon dioxide.

11 A. Oh. I'm sorry. Carbon dioxide can cause  
12 small pupils as well.

13 Q. How about carbon monoxide?

14 A. No.

15 Q. Doctor, we talked a little bit about  
16 cooling a patient. If you had a person suffering  
17 from heat stroke who is removed from the heat and  
18 maybe have their clothes removed and they're wetted  
19 down in a cooler temperature, say, 7-degree --  
20 70-degree temperature or cooler, can -- how quickly  
21 would you expect to see their body begin to cool?

22 A. Very quickly. And that's exactly what we  
23 do is we wet them down in a 70-degree environment  
24 or less. And our goal is to get them to go down  
25 approximately 2 degrees Fahrenheit every 5 minutes.

1 So if somebody is 104, they should be down at 100  
2 in 10 minutes if you're aggressively treating them.

3 MR. HUGHES: Your Honor, we have a stipulation  
4 for the admission of some medical records.

5 THE COURT: Okay.

6 MR. HUGHES: Exhibit 167, 168, 208, 209, 257,  
7 384, 385, 386, 387, 388, 389, 390, 391, 392, 393,  
8 394, 395. And those will be the medical records.

9 THE COURT: Ms. Do?

10 MS. DO: No objection, Your Honor.

11 THE COURT: The exhibits just identified by  
12 Mr. Hughes are admitted.

13 MR. HUGHES: Thank you.

14 (Exhibits 167, 168, 208, 209, 257, and  
15 384-395 admitted.)

16 Q. BY MR. HUGHES: And, Doctor, you  
17 indicated that you -- in preparation for your  
18 reaching opinions in this case, you reviewed  
19 medical records?

20 A. Yes, sir.

21 Q. Did you review the medical records of the  
22 18 participants from 2009 who went to various  
23 hospitals?

24 A. Yes.

25 Q. Including the three patients who actually

1 died?

2 A. Yes.

3 Q. And based on your review of those medical  
4 records and the witness statements that you  
5 indicated you had reviewed, do you have an opinion  
6 as to the cause of death of Liz Neuman?

7 A. Yes.

8 Q. And can you tell us, Doctor, what that  
9 opinion is?

10 A. Well, based on -- on the history, the  
11 records that were looked at with all the physicians  
12 that saw the patient, based on the autopsy, based  
13 on all those things, it appears that she died of  
14 heat stroke and heat exposure.

15 Q. And can you tell us what about  
16 Ms. Neuman's medical records in particular you  
17 believe relevant to determining her cause of death.

18 A. Well, she unfortunately went through the  
19 whole progression of -- of what heat stroke does to  
20 the body. Unfortunately she came in with those --  
21 altered mental status. She required to be  
22 intubated or put on a ventilator. She developed  
23 those things we talked about, late-stage findings.  
24 She went -- her kidneys didn't do well. Her BUN  
25 and creatinine went up. She went -- what would

1 appear to be some fluid in her lungs. She went  
2 into that DIC. We talked about that. The -- the  
3 arteries start to leak, and then she started  
4 bleeding from -- from everywhere, which it's an --  
5 it's an awful thing.

6 She -- the doctors seemed to be very  
7 diligent in looking for all other causes. Whenever  
8 you have a patient that has -- that is this sick,  
9 you want to look for any reversible cause, anything  
10 you can do to help that patient. And they -- from  
11 what I read, these doctors did a great job in  
12 looking for all possible other causes and any  
13 treatment possible. They were very aggressive with  
14 her.

15 Q. Do you know whether Ms. Neuman received  
16 I.V. fluids prior to hospitalization?

17 A. I believe she did, but I don't know off  
18 the top of my head.

19 Q. Let me go ahead and find that record for  
20 you. Doctor, I'm going to show you Exhibit 365,  
21 which has already been admitted. And specifically  
22 referring to Bates stamp 2593, which is the  
23 beginning of the Guardian Air records, and then  
24 2597, which is the Verde Valley Fire District  
25 records.

1 Can you take a look at those and let --  
2 let me know if she received any sort of I.V.  
3 therapy prior to hospitalization?

4 **A. Yes, she did.**

5 **Q.** Can the receipt of I.V. therapy affect  
6 whether or not a person presents at the hospital  
7 with the telltale signs of dehydration?

8 **A. It definitely would decrease your signs  
9 of dehydration if you've had I.V. hydration.**

10 **Q.** Now, what about a patient who is -- and I  
11 don't want to misuse the clinical word, but,  
12 essentially, dead. They're not breathing on their  
13 own. Their heart is not beating on their own, but  
14 that's being done mechanically for them.

15 Can the receipt of I.V. therapy -- even  
16 though a machine is -- is giving them compressions  
17 and/or a person is giving them compressions in the  
18 form of CPR and they're being given oxygen by a  
19 mask -- can that make any difference as to whether  
20 or not they would present in the hospital or  
21 elsewhere with the classical signs of dehydration?

22 **A. If you're doing CPR, you're pressing on  
23 someone's chest. You're doing artificial blood  
24 pumping. So if you're adding fluid to that, it's  
25 something that would help them in that situation.**

1 **If they were dehydrated, you would want to try to  
2 give them fluids to help bring their heart back.**

3 **Q.** Have you reached an opinion as to the  
4 cause of James Shore's death?

5 **A. Yes.**

6 **Q.** And what is that opinion?

7 **A. Based on the heat exposure, based on  
8 their symptoms, and based on the autopsy report,  
9 they died of heat exposure or heat stroke.**

10 **Q.** And can you tell me whether you've  
11 reached an opinion as to the cause of Kirby Brown's  
12 death?

13 **A. Yes.**

14 **Q.** And what is that opinion?

15 **A. It's the same opinion. It's based on the  
16 exposure to the heat, the clinical presentation,  
17 and the autopsy report. All would be died of heat  
18 stroke.**

19 **Q.** We've heard mention in prior testimony of  
20 review in Ms. Neuman's records of cholinergic and  
21 anticholinergic toxidromes by her treating  
22 physicians. Did you see her doctors reviewing  
23 those possibilities?

24 **A. Absolutely.**

25 **Q.** And have you considered the possibility

1 of -- of her ingestion of a substance that could be  
2 cholinergic or anticholinergic?

3 **A. Yes. I've considered that.**

4 **MS. DO:** Objection. Foundation as to time,  
5 please.

6 **THE COURT:** Sustained as to form and  
7 foundation.

8 **Q.** BY MR. HUGHES: And what medical records  
9 did you review?

10 **A. All of them that I have.**

11 **Q.** And what time period, then, did -- did  
12 those medical records encompass?

13 **A. The time they have of starting from the  
14 EMS for the prehospital, the paramedics arrival to  
15 discharge, and then the autopsies.**

16 **Q.** And based upon that review, do you have  
17 an opinion as to whether Ms. Neuman's cause of  
18 death was caused by her ingestion of some sort of a  
19 toxic substance?

20 **A. Do I have an opinion? Yes. And I don't  
21 believe it was due to a toxic substance ingestion.**

22 **Q.** And can you explain that opinion.

23 **A. That's a good question. The doc here did  
24 a really good job. I mean, they thought about it.  
25 You can read through their whole medical record,**

1 especially through Liz Neuman. I mean, they  
2 thought of anticholinergic. They thought of  
3 cholinergic. They talked to toxicologists. They  
4 talked to -- they called Poison Control Centers.  
5 They talked -- thought about carbon monoxide  
6 poisoning.

7 **The same list of what are the  
8 possibilities that you want to go through and say  
9 check it off no, or maybe, or yes. They were very  
10 diligent about it in looking at all those  
11 possibilities. And, essentially, due to the  
12 presentation, the -- there didn't follow into one  
13 of those categories.**

14 **The people that are anticholinergic  
15 normally have huge pupils, and -- they call them  
16 dry as a bone, mad as a hatter. And that's the  
17 anticholinergic. These people are very dry and big  
18 pupils. And that didn't really fit.**

19 **Part of it did. They were dry. But then  
20 they had these little pupils. So then that brings  
21 the other side of the coin, called "cholinergic" or  
22 organophosphate sort of poisonings.**

23 **Those people generally have -- they can  
24 have pinpoint or they can have big pupils. But  
25 they -- generally, the ones that I've seen and in**

1 the literature, they're just drooling like crazy.  
 2 They have a mnemonic for that called  
 3 "SLUDGE." It's called "salivation, urination,  
 4 defecation, lacrimation, GI upset." So they're --  
 5 basically, water is flowing from their mouth, their  
 6 eyes, I mean, everywhere, all orifices. And these  
 7 people appeared to be dry. So it didn't really fit  
 8 in either of those categories.

9 They thought about the pinpoint pupils.  
 10 The most common thing we see is a narcotic  
 11 overdose. And that's somebody who used heroine or  
 12 something like that or morphine. And the  
 13 paramedics gave them the antidote for that, which  
 14 is Narcan or naloxone. It didn't effect anything.

15 So they went through -- they checked  
 16 carbon monoxide levels. Those are things that  
 17 people can get -- big groups of people can get  
 18 sick. They checked for those as well. So they  
 19 went through the list very well of checking off, is  
 20 it this? It doesn't look like it. Is it this? It  
 21 doesn't look like it. So they excluded those, in  
 22 my opinion.

23 Q. Now, there has been some testimony that  
 24 some pink, frothy sputum was observed. I think the  
 25 testimony -- I'll give it to you hypothetically.

1 Let's say it was an amount that would maybe cover  
 2 the top of a -- of a cup. If you, say, had a latte  
 3 or something with some of that skim on top, is that  
 4 something that you would find consistent or  
 5 inconsistent with exposure to an organophosphate?

6 A. Generally it's inconsistent. You see the  
 7 pink, frothy sputum is classic pulmonary edema;  
 8 whereas the organophosphate, these people, the ones  
 9 I've seen, they're just drooling, drooling,  
 10 drooling. Their eyes are running, drooling,  
 11 drooling, drooling. It's not a frothy. It's  
 12 drool.

13 Q. Doctor, have you considered the  
 14 possibility that some other substance -- or were  
 15 you asked to consider the possibility of whether,  
 16 for example, certain types of rat poison could have  
 17 caused Ms. Neuman's death?

18 A. Yes.

19 Q. And do you know the names of the types of  
 20 rat poison you were asked to look into?

21 A. Well, the chemical name of one of them  
 22 was bromadiolone. And there was another one as  
 23 well. But they're based on the same chemical  
 24 structure. And how they work are -- I don't know  
 25 if you've ever heard of Coumadin. Coumadin is a

1 blood thinner that -- that we as humans take to  
 2 make our blood thin in severe cases.

3 But the -- the way it works in killing  
 4 rats was that it -- it makes you bleed to death.  
 5 And it's pretty quick. There is a test for that.  
 6 It's something called "urine INR." And I didn't  
 7 see any evidence of that in the broad spectrum of  
 8 the patients.

9 Q. Now, with respect to the particular types  
 10 of rat poison, do you happen to remember the types  
 11 that you were asked to look into, the names -- the  
 12 brand names?

13 A. Chemical names? The brand names? I've  
 14 got it written down, but I don't have it handy.

15 Q. Would referring to your notes refresh  
 16 your recollection?

17 A. It would.

18 MR. HUGHES: Your Honor, may the witness refer  
 19 to his notes?

20 THE COURT: Yes.

21 THE WITNESS: So of the rat poisons, this was  
 22 AMDRO Fire Ant Bait.

23 Q. BY MR. HUGHES: And I'll -- I'll ask  
 24 about --

25 A. Oh. I'm sorry.

1 Q. That's okay. I'll ask about ant poisons  
 2 in a moment.

3 A. Okay.

4 Q. But were you asked to look into three  
 5 particular types of rat poisons?

6 A. Correct. Yes.

7 Q. And do you recall what the brand names  
 8 for those three?

9 A. Well, here's one. It's Just One Bite  
 10 Rat & Mouse Bait Bar.

11 Q. Okay. And does that Just One Bite poison  
 12 have the -- the chemical that you just testified  
 13 about a moment ago?

14 A. Yes. It's bromadiolone. Correct.

15 Q. And do you recall what the other two rat  
 16 poisons were?

17 A. Well, here's J.T. Eaton Bait Block  
 18 Rodenticide. Kills rats and mice.

19 Q. And does that have that same chemical or  
 20 a similar chemical?

21 A. It's a similar class or chemical. Yes.

22 Q. And does that cause the same sorts of  
 23 effects on the body as the other one?

24 A. Yes.

25 Q. And what was the third?

1 **A. One Bite? Is that one we already did?**

2 **One Bite II?**

3 **Q.** Is there just one -- well, let me ask  
4 you --

5 **A. Just One Bite.**

6 **Q.** -- is -- does that contain the same  
7 chemical as --

8 **A. Bro- --**

9 **Q.** -- the Just One Bite?

10 **A. Bromadiolone --**

11 **Q.** Okay.

12 **A. -- yes. What about d-CON?**

13 **Q.** And what sort of active chemical is in  
14 d-CON?

15 **A. Same class. Rodenticide.**

16 **Q.** And what would the signs and symptoms,  
17 then, be of a patient who had consumed one of those  
18 rat poisons?

19 **A. Bleeding.**

20 **Q.** Now, there has been some testimony that  
21 Ms. Neuman displayed bleeding in the form of this  
22 condition of DIC. Is that consistent or  
23 inconsistent with the rat poison theory?

24 **A. Well, bleeding -- bleeding is bleeding.**

25 **But the problem is is her symptoms presented so --**

1 **DIC presented later when she started bleeding,**  
2 **where this would have -- would have affected her**  
3 **quickly -- quicker if it was a rat poison.**

4 **Q.** If a person had been poisoned with --  
5 with one of these chemicals of rat poison to the  
6 point where they were unconscious and in need of  
7 CPR, what would 45 minutes to an hour of CPR do to  
8 the chest of a person who had been fatally poisoned  
9 by rat poison?

10 **A. It would be just bruised and internal**  
11 **bleeding. Basically, probably kill you, 45 minutes**  
12 **of CPR.**

13 **Q.** And was there any indication of that in  
14 her medical record?

15 **A. No.**

16 **Q.** Now, were you also asked to look into  
17 the -- well, let me ask you about those -- the  
18 chemicals in those different rat poisons. Are any  
19 of those chemicals even an organophosphate?

20 **A. No, they're not.**

21 **Q.** So you were asked to -- to look into a  
22 chemical involved with an ant poison; is that  
23 correct?

24 **A. Correct.**

25 **Q.** Do you recall the brand name of the ant

1 poison?

2 **A. AMDRO Fire and Ant.**

3 **Q.** And what is the active sort of chemical  
4 in the AMDRO?

5 **MS. DO:** Your Honor, I'm going to object to  
6 the foundation.

7 **THE COURT:** Sustained.

8 **Q.** BY MR. HUGHES: Doctor, do you, as an  
9 emergency room physician, see patients who have  
10 ingested different sorts of chemicals come to the  
11 emergency department?

12 **A. All the time.**

13 **Q.** And when a patient presents to the  
14 emergency department, what are some of the things  
15 that you research to try and determine how to treat  
16 that patient?

17 **A. I look at what the ingredient is. And**  
18 **then there is a form called the "MSDS," which is**  
19 **the Material Safety and Data Sheet. I generally**  
20 **try to look at that and see what its effects are.**

21 **Q.** And you said you looked to see what the  
22 ingredient is. Do you -- do you have patients, if  
23 possible, bring the package of whatever it is that  
24 they --

25 **A. Absolutely. We train our -- our fire and**

1 **EMS first responders to grab everything they can.**

2 **Q.** And did you -- did you review in this  
3 case the package of -- or a package of AMDRO?

4 **A. Yes.**

5 **Q.** And did you review -- you said an MSDS.  
6 What's an MSDS?

7 **A. It's called "Material Safety and Data**  
8 **Sheet." Basically, any -- any company that has --**  
9 **or any active ingredient in some of these chemicals**  
10 **has a sheet that basically tells you what the**  
11 **toxicity is. It tells the fire department if it's**  
12 **flammable, is it something that's dangerous, what**  
13 **sort of protection do we as -- as healthcare**  
14 **providers or as -- if they're first responders,**  
15 **what do they have to wear? Do they have to wear**  
16 **something to protect their face? Do they not need**  
17 **to breath it? It's an important sheet to have to**  
18 **know when you're dealing with a chemical.**

19 **Q.** And -- and then did you do such a review  
20 regarding the AMDRO in this case?

21 **A. Yes.**

22 **Q.** And do you know what the -- is the  
23 chemical in AMDRO an organophosphate?

24 **A. It is not.**

25 **Q.** And what are the signs and symptoms that

1 you would expect to see from someone who had  
2 ingested AMDRO?

3 **A. Such as irritation. It's -- the -- in**  
4 **these MSDS they show a lethal dose for rats and**  
5 **rabbits of how much. These studies, they tell you**  
6 **how much you would have to ingest if you were a rat**  
7 **to kill 50 percent of the rats they gave it to.**

8 **And the amount that they would have to**  
9 **consume would be amazing. The oral lethal dose,**  
10 **50, for this is 34,600 milligrams per kilogram.**  
11 **That's a lot to have to actually cause much**  
12 **toxicity. So the chances of this causing toxicity**  
13 **is pretty low.**

14 MR. HUGHES: Your Honor, would this be a good  
15 place to take the morning break?

16 THE COURT: Yes. Thank you, Mr. Hughes.

17 Ladies and gentlemen, we will take the  
18 morning recess. Please remember the admonition.  
19 Please reassemble in 15 minutes. It will be about  
20 11:15.

21 And, Dr. Dickson, the rule of exclusion  
22 went -- has been invoked in this case, meaning you  
23 cannot discuss the case or your testimony with any  
24 other witnesses until the trial is over. But you  
25 can talk to the lawyers as long as other witnesses

1 are not present.

2 THE WITNESS: Okay. Thank you.

3 THE COURT: And you are excused at this time  
4 as well.

5 And we are in recess.

6 (Proceedings continued outside presence  
7 of jury.)

8 THE COURT: The record will show the presence  
9 of Mr. Ray and the attorneys.

10 Ms. Do.

11 MS. DO: Thank you, Your Honor. I just have a  
12 few issues. The state has since the break redacted  
13 Dr. Dickson's reports. I have an objection first  
14 because I understand Mr. Hughes is going to move to  
15 admit the -- the reports themselves. And my  
16 objection would be based upon hearsay.

17 The evidence is going to be the testimony  
18 from the doctor on the stand. But I think it's  
19 inappropriate to admit the -- the reports. And I  
20 wanted to make that objection outside the presence  
21 of the jury.

22 Secondly, if the Court is inclined to  
23 allow its admission, he has redacted the paragraph  
24 regarding what should have been done regarding  
25 medical personnel. However, what's not been

1 redacted is this last paragraph. And I'll just  
2 read it.

3 Multiple patients at this event and prior  
4 events had signs and symptoms of classic heat  
5 stroke. In my opinion, the decedent's symptoms  
6 were not recognized and treated soon enough, which  
7 resulted in his death.

8 I would -- if the Court is inclined to  
9 admit the reports into evidence, I believe that  
10 last sentence is inappropriate and inadmissible.  
11 So that needs to be redacted.

12 Regarding the reference to the prior  
13 events, my concern with that is that it is so vague  
14 that it would be left to the jurors to interpret  
15 the possibility that there has been additional  
16 incidents that have not necessarily been testified  
17 to in this trial.

18 THE COURT: Mr. Hughes, first with regard  
19 to --

20 Ms. Do, are you done? I'm sorry.

21 MS. DO: I am. And if the Court would like, I  
22 could present the exhibits as redacted.

23 THE COURT: We'll get that done. Thank you.

24 Mr. Hughes, first, with regard to the  
25 hearsay, this is a report that was prepared for

1 litigation; correct?

2 MR. HUGHES: That's correct, Your Honor.

3 THE COURT: So what -- what would your  
4 response be to the hearsay objection?

5 MR. HUGHES: Your Honor, the expert's  
6 testimony has been voluminous, and we're not done  
7 yet. The report is a summary of that voluminous  
8 information. That would be the -- the exception.

9 THE COURT: I'm not aware of that exception.

10 Ms. Do.

11 MS. DO: Neither am I, Your Honor.

12 THE COURT: Neither have I.

13 MS. DO: I have never seen an instance in a  
14 criminal matter where the actual reports, whether  
15 they're the expert reports or the police reports,  
16 are admitted.

17 THE COURT: Okay.

18 MS. DO: It's classic hearsay.

19 THE COURT: Okay. I commonly see lab reports  
20 admitted.

21 MS. DO: Right.

22 THE COURT: That. But unless you have some  
23 authority, I would sustain the hearsay objection.

24 MR. HUGHES: I have no other authority,  
25 Your Honor.



1 THE COURT: Okay. And then the other  
2 question, though, is whether it's in the -- in the  
3 report or just done verbally. Other -- it just --  
4 this is the first I've ever -- well, Mr. Kent or  
5 Dr. Kent is the first time I've every seen actual  
6 potential medical opinion talking about heat stroke  
7 in -- in prior participants.

8 And so there are virtually no records  
9 other than Daniel P.'s records that could be looked  
10 at. So it would have to come from reading a number  
11 of statements or seeing a PowerPoint.

12 Where would that come from?

13 MR. HUGHES: Your Honor, it's from the -- the  
14 witness statements from prior years. It was my  
15 understanding this morning that the Court would  
16 allow us to inquire about 2007 and 2008. I had no  
17 intention or was not going to ask about  
18 Mr. Pfankuch.

19 I have told the expert that already, that  
20 I don't intend to ask about the 2005 year at all.  
21 But I did want to ask if his opinions that he's  
22 given today are based on the signs and symptoms of  
23 vomiting and loss of consciousness that have been  
24 described by prior participants in 2007 and 2008.

25 MS. DO: Your Honor, on -- on that, my

1 understanding is that Dr. Dickson was provided with  
2 a number of supplemental reports by the sheriff's  
3 office back in December of 2010. I've taken a look  
4 at the specific supplements. And of those only a  
5 number of them are from witnesses who actually  
6 testified.

7 The greater -- the greater majority of  
8 the witness supplements that were reviewed by this  
9 witness -- and I assume he'll rely on it -- are  
10 witnesses who have never testified to this jury.  
11 So, essentially, we're going to allow this expert  
12 to back door in hearsay statements that -- that the  
13 defense has no ability to cross-examine on.

14 THE COURT: I'm just thinking through the  
15 testimony so far. And I'm not -- I'm not  
16 commenting in any way on the evidence but trying to  
17 sort out this evidentiary issue. Dr. Dickson made  
18 a statement about if someone had reached the point  
19 of having an altered mental state, possibly  
20 somebody could be rehabilitated without medical  
21 intervention, or something to that effect.

22 This -- this whole distinction between  
23 heat exhaustion and heat stroke -- and he discussed  
24 that. It's on a continuum. But it -- like it  
25 makes a jump at some point. He made that jump

1 at -- at what he, I believe, said when he talked  
2 about mental states.

3 What I indicated before and what -- what  
4 has been admitted as observational can be given to  
5 this expert for his opinion on what it might show,  
6 but not the -- of course, the foundation for  
7 opinion. And if you look at a lot of statements  
8 from people that were in a sweat lodge, what  
9 experts commonly rely on, it's -- it's not like  
10 there is a big bank of authority here precedent for  
11 this particular issue.

12 But those statements, I think the  
13 definitions are very important that -- what -- what  
14 can be presented are the observations that have  
15 been testified to here in court.

16 Ms. Do.

17 MS. DO: And -- and that's fine with -- with  
18 the defense, Your Honor. I just ask somehow in  
19 Mr. Hughes' question that that is made clear to the  
20 jury. As I noted in the last paragraph, this is  
21 prior events. And certainly the jurors could be  
22 sitting there wondering -- you know -- what other  
23 prior events as opposed to having this witness's  
24 testimony closely -- you know -- be closely hued to  
25 the evidence they've actually heard that we've had

1 a chance to cross-examine on.

2 THE COURT: But -- but some of those are from  
3 the prior events. And that's going to be made  
4 known. But it will be in the context of what the  
5 testimony actually was relating to those 2007 and  
6 '8 events, Mr. Hughes.

7 MR. HUGHES: I'll make it -- I'll make that  
8 clear. And, Your Honor, to -- although I've told  
9 the witness I don't intend to ask about 2005, if --  
10 with the leave the Court and Ms. Do, if I could  
11 have a little leeway in asking some leading  
12 questions in that area, I want to make sure that I  
13 don't -- that we don't open something that we don't  
14 want -- that I don't want to open.

15 And if I ask a leading question in the  
16 sense of do you know if -- if -- basically, to make  
17 it clear that I'm asking about 2007 or 2008 and not  
18 about another year. I just want to make it clear  
19 to the witness that his -- his -- the -- you  
20 know -- if witnesses have testified that they saw  
21 people -- you know -- people unconscious in 2008,  
22 would that make a difference, things along those  
23 lines.

24 Technically that's a leading question.

25 But I think under Rule 612 there is some leeway --

1 or maybe it's 611. There is some leeway in asking  
2 leading questions. I think this would be an  
3 appropriate area to do that.

4 THE COURT: All right. I agree with the  
5 general proposition in the -- getting someone to an  
6 area.

7 But, Ms. Do, response on that?

8 Mr. Li wants to have a word there.

9 MS. DO: So -- so I understand, Your Honor, is  
10 that the state's theory that what has occurred to  
11 other individuals in years prior is going to be  
12 relevant to this doctor's opinion as to what the  
13 cause of death or illnesses are in 2009? Is that  
14 the -- the relevance?

15 THE COURT: Mr. Hughes?

16 MR. HUGHES: I want to find out if the  
17 symptoms that he's seen or that witnesses have  
18 testified to would be relevant on the causation  
19 issue. In other words, does that give him the  
20 greater confidence, in his opinion, that  
21 organophosphates, for example, were not at play in  
22 this particular case because of the fact that these  
23 symptoms were seen in 2007 and 2008.

24 MS. DO: Well, I think we just have some  
25 really serious issues with that theory, Your Honor.

1 We've litigated and argued that a number of times.  
2 The Court knows, for example, from Dr. Mosley --  
3 and we provided the Court with the transcript.  
4 Nothing was taken out of context -- that the  
5 medical examiners in this case stated that when you  
6 determine cause of death, you are going to  
7 extrapolate facts of other individuals in years  
8 prior.

9 This Court has made comments about the  
10 disparity between these events and -- and what was  
11 seen. I think the Court has discretion and  
12 authority under 401 to determine whether or not the  
13 proffer by the state even makes that relevance  
14 connection.

15 And I don't see how under any theory of  
16 logic, common sense, or certainly medical theory,  
17 how what happens to somebody completely different  
18 three years before can help somebody understand  
19 what happened medically, physically, to somebody  
20 different in 2009.

21 I think that -- that there is a serious  
22 403 danger here with the jury, rather than making  
23 that logical connection, because it's not there, is  
24 going to make inferences towards propensity. And  
25 that's the concern. I think the Court has

1 expressed this a number of times.

2 THE COURT: This would be the subject for  
3 experts, I think. And what I would note, though,  
4 Mr. Hughes, I get concerned when you say  
5 "unconscious." Because it was like the discussion  
6 we had about Amayra Hamilton and observing  
7 Daniel P., and how she phrased it and other people  
8 phrased it, "unresponsive."

9 You're dealing with lay observations.

10 And -- and there are virtually no medical records  
11 that are available for -- for anybody from 2007  
12 and 2008. I -- but I'm just concerned when you  
13 start talking about unconscious. And -- and I  
14 think it needs to be made clear that these are lay  
15 observations.

16 Ms. Do.

17 MS. DO: Judge, I want to say one more thing.  
18 And I appreciate the Court's time on this issue.  
19 Under Arizona Rules of Evidence, 703, I understand  
20 experts can rely on a number of areas that -- that  
21 could be hearsay. But the rule is couched in terms  
22 of is it of a type reasonably relied upon. And I  
23 think that that's not a -- that's not a forgone  
24 conclusion here. You have got a medical examiner  
25 who says no.

1 THE COURT: You heard my comment on -- about  
2 that. It -- I don't -- this is an area where there  
3 is a lot of authority and precedent to say what you  
4 reasonably -- what you rely on as an expert in  
5 this. But -- and that's -- and it's true. You can  
6 offer these opinions, and it does not bring the  
7 hearsay in.

8 But what Mr. Hughes is talking about is  
9 actually presenting in court what has come in in  
10 evidence and having a comment about it. I think  
11 there are really two different kind of -- of  
12 issues.

13 MR. HUGHES: And, Your Honor, with -- with --  
14 I think an appropriate question -- I will -- I will  
15 lead to the point where it's clear that this is --  
16 I'm asking for his opinion based on -- you know --  
17 if a witness has testified that they saw a person  
18 who appeared to this lay witness to be unresponsive  
19 or who appeared to this lay witness to be vomiting.  
20 You know.

21 It can go from there to make it very  
22 clear that we're talking about evidence that's been  
23 brought out in this courtroom and not something  
24 that has not been brought out in the courtroom.

25 With respect, though, to 703, I would

1 note Dr. Lyon did have the opinion that the prior  
2 years would be relevant to a determination.

3 THE COURT: Well, I don't think he testified  
4 to that. I think that was in the interview, and  
5 you pointed it out to me. It was -- in the  
6 interview Ms. Do had asked him a question about  
7 that. And he said, well, it would be relevant.

8 Kind of a general statement without specifying.

9 Is that the reference? Because I don't  
10 think he testified to that?

11 MR. HUGHES: Your Honor, that's correct. He  
12 said that specifically in his interview. And I  
13 attempted to get some follow up from him to be very  
14 clear and was not allowed to go down that line of  
15 questioning with Dr. Lyon.

16 But it would be the state's proffer that  
17 if Dr. Lyon had been allowed to testify or if he is  
18 allowed in a rebuttal case or later in the case,  
19 the state's case in chief, he would testify that  
20 consistent with his interview that events from  
21 prior years would be relevant to him in making his  
22 determination.

23 THE COURT: Back to the immediate issue.  
24 Because that raises a lot of complications,  
25 Mr. Hughes.

1 But it appears, Ms. Do, that Mr. Hughes  
2 is just -- is going to avoid the whole issue and  
3 confine to at least what's in court so people know  
4 what's being dealt with.

5 MS. DO: All right. Thank you.

6 THE COURT: Is that correct, Mr. Hughes?

7 MR. HUGHES: That's correct.

8 Your Honor, again, just for purposes of  
9 the record, the comment that Ms. Do is correctly  
10 attributing to Dr. Mosley was also one in an  
11 interview. It was not introduced in court.

12 THE COURT: And I recall that as well. It was  
13 a rather brief passage, as it was with Dr. Lyon.

14 Okay. Thank you.

15 (Proceedings continued in the presence of  
16 jury.)

17 THE COURT: The record will show the presence  
18 of Mr. Ray, the attorneys, and the jury.

19 Dr. Dickson has return to the stand.

20 Mr. Hughes.

21 MR. HUGHES: Thank you.

22 Q. Doctor, I think where we had left off, we  
23 were talking about some studies about the ant  
24 poison AMDRO and it's potential lethality.

25 Does this MSDS sheet that you told us

1 about -- does it talk about the amount of AMDRO  
2 that would have to be ingested to kill, for  
3 example, 50 percent of the rats --

4 MS. DO: Your Honor --

5 Q. BY MR. HUGHES: -- in the study?

6 MS. DO: I'm sorry. Objection to foundation  
7 and hearsay.

8 THE COURT: Sustained as to foundation.

9 Mr. Hughes.

10 Q. BY MR. HUGHES: Doctor, does this MSDS  
11 sheet -- is that something that you rely upon as an  
12 emergency room physician in trying to determine how  
13 to treat a patient?

14 A. Yes.

15 Q. And as a physician, when a patient  
16 presents, do you try and determine how much of a  
17 substance the patient's ingested?

18 A. Yes.

19 Q. And why is it you try and determine how  
20 much they've ingested?

21 A. **So you can find out how sick they're**  
22 **going to get from it or if it's toxic at all.**

23 Q. And what is one of the ways -- or what  
24 are -- how -- what are some of the things you rely  
25 upon in trying to make that determination?

1 **A. One of them is the MSDS for things that I**  
2 **don't know off the top of my head. And there are**  
3 **certain ones that we see chronically, like Tylenol,**  
4 **things like that. But for things like this, I**  
5 **would look it up.**

6 Q. If you had a patient who had somehow  
7 ingested AMDRO who came to your emergency  
8 department, what would you try and look up in this  
9 MSDS?

10 A. **The signs, the symptoms, if there is any**  
11 **potential toxicity to my staff or myself. Do they**  
12 **need to be decontaminated -- and then the LD50,**  
13 **which is the lethal dose that would kill 50 percent**  
14 **of the rats or guinea pigs, to kind of get a**  
15 **ballpark figure of how dangerous this stuff is.**

16 Q. And what is the LD50 for AMDRO?

17 MS. DO: Your Honor, again, objection as to  
18 foundation, hearsay, and Rule 703.

19 THE COURT: Overruled.

20 You may answer that if you can.

21 THE WITNESS: I've got to look it up here.

22 Q. BY MR. HUGHES: Would referring to your  
23 notes refresh your recollection?

24 A. **Yes. For a rat it's 3,000 --**  
25 **34,600 milligrams per kilogram, which, basically,**

1 **would be well over a pound of this stuff to hurt a**  
2 **rat you'd have to ingest.**

3 Q. For the AMDRO?

4 A. Yes.

5 Q. And based on your training and  
6 experience, would a human being need less or more  
7 to harm a human being?

8 A. More.

9 Q. Did you rely -- or review a similar MSDS  
10 for the rat poisons that we've talked about?

11 A. Yes.

12 Q. Do you have an opinion as to how much rat  
13 poison a person would have to consume of one of  
14 these three types that we've been -- you testified  
15 to earlier this morning -- do you have an opinion  
16 as to how much a human would have to consume to be  
17 fatal?

18 A. **A whole pound. This thing would --**  
19 MS. DO: Your Honor, objection. Foundation.

20 THE COURT: Sustained.

21 Q. BY MR. HUGHES: And what is that -- I'll  
22 ask you your opinion in a moment. But what is your  
23 opinion based upon?

24 A. **Well, you take the lethal dose that would**  
25 **kill 50 percent of the rats, the LD50. And it says**

1 **how many milligrams per kilogram that is. So it's**  
2 **a number. It's -- you know -- 4,000, whatever it**  
3 **is, for each substance. And then you see how much**  
4 **that would be for, say, a 70 kilogram person.**  
5 **That's the average weight of a -- of a human.**

6 Q. What's 70 kilograms in pounds? Do you  
7 know?

8 A. **160, ballpark -- 150, 160. And then you**  
9 **do the math. It would take -- you know -- how**  
10 **many -- how many grams or -- it would take about a**  
11 **pound.**

12 Q. And you mentioned that there would be  
13 signs and symptoms. For someone who had ingested  
14 AMDRO, what would those -- signs and symptoms would  
15 you expect to see if a person had ingested AMDRO?

16 MS. DO: Your Honor, I'm going to ask that the  
17 witness identify if he's reading from something or  
18 if he's reading -- testifying from knowledge.

19 THE COURT: Mr. Hughes, if you could clarify  
20 that with your question, please.

21 Q. BY MR. HUGHES: Doctor, is there a source  
22 that can provide you with some of the signs and  
23 symptoms of ingestion of AMDRO?

24 A. Yes.

25 Q. And what is that source?

1 A. **THE MSDS.**

2 Q. And would referring to that MSDS refresh  
3 your recollection as to the signs and symptoms of  
4 someone who had ingested AMDRO?

5 A. Yes.

6 Q. Have you -- go ahead and tell us what  
7 those signs and symptoms would be.

8 A. **Well, it causes skin irritation, causes**  
9 **some moderate eye irritation, can cause some --**  
10 **they want you to induce somebody to vomit if they**  
11 **drink it, so it says.**

12 Q. Have you -- in your 10 years in Yuma,  
13 have you seen anybody who has ingested AMDRO come  
14 to the emergency department?

15 A. No.

16 Q. There has been some testimony from  
17 another witness about a report that was prepared in  
18 this case by Dawn Sy, a criminalist. Have you had  
19 a chance to look at that report?

20 A. Yes.

21 Q. And putting on the projector Exhibit 345,  
22 is this a copy of Ms. Sy's report?

23 A. Yes.

24 Q. And have you had an opportunity to review  
25 similar MSDS sheets for the chemicals referred to

1 in that report?

2 A. Yes.

3 Q. With respect to the conclusions that are  
4 referred to, then, on page 2 of the report, it  
5 indicates that trace amounts of a chemical called  
6 "2-ethyl-1-hexonal" were detected in Item 356. Did  
7 you review the MSDS for 2-ethyl-1-hexonal?

8 A. Yes.

9 Q. Do you know what 2-ethyl-1-hexonal is  
10 used in?

11 A. **It's said use --**

12 MS. DO: Your Honor, objection. Foundation.  
13 Calls for hearsay.

14 THE COURT: Sustained.

15 Q. BY MR. HUGHES: Doctor, do you have an  
16 opinion as to what -- what that chemical was used  
17 in?

18 A. **Based on what the MSDS says, yes, I have**  
19 **an opinion.**

20 Q. And is that, again, something that you  
21 would rely upon in your professional duties as a  
22 doctor -- this MSDS sheet?

23 A. Yes.

24 Q. And what was that opinion?

25 A. **It's used in medical grade vinyl tubing**

1 **is one of the examples they use.**

2 **Q.** And 356 is a can containing pieces of  
3 material; is that correct?

4 **A. Yes.**

5 **Q.** And do you know to what temperature and  
6 for how long Ms. Sy heated that can containing the  
7 pieces of tarp to get these results?

8 MS. DO: Objection, Your Honor. Foundation,  
9 beyond the scope of this witness's qualifications.

10 THE COURT: Sustained as to foundation.

11 Mr. Hughes.

12 **Q.** BY MR. HUGHES: Well, let me ask you  
13 hypothetically, Doctor, if Ms. Sy heated that  
14 Item 356 to approximately 50 degrees Celsius or  
15 centigrade for eight hours, and assuming that she  
16 did that and found trace amounts of  
17 2-ethyl-1-hexanol, what sort of signs and symptoms  
18 based on this MSDS would you expect to see for a  
19 person who had ingested 2-ethyl-1-hexanol?

20 MS. DO: Objection, Your Honor. Foundation  
21 and hearsay.

22 THE COURT: It's -- it's a foundation issue,  
23 Mr. Hughes. It's sustained.

24 **Q.** BY MR. HUGHES: Doctor, did you review an  
25 MSDS for 2-ethyl-1-hexanol?

1 **A. Yes.**

2 **Q.** And does that sheet show the signs and  
3 symptoms that you could expect to see for a person  
4 who had been exposed to 2-ethyl-1-hexanol?

5 MS. DO: Your Honor, I'm sorry. Same  
6 objection.

7 THE COURT: Overruled.

8 You may answer that.

9 THE WITNESS: Yes. It does show signs and  
10 symptoms.

11 **Q.** BY MR. HUGHES: What would be those signs  
12 and symptoms?

13 **A. Irritated eyes, nose, throat, skin,**  
14 **cough, sore throat, headache, dizziness, and**  
15 **weakness.**

16 **Q.** And is there a LD50 study in that MSDS  
17 you just referred to?

18 **A. Yes. It says -- it says they exposed**  
19 **rats to as much as 120 parts per million for six**  
20 **hours a day for 90 days, and they had no adverse**  
21 **effects.**

22 **Q.** Can you tell us what a trace amount is?

23 **A. Not very much.**

24 **Q.** And did you review an MSDS for  
25 2-ethylhexyl acetate?

1 **A. Yes.**

2 **Q.** And did that MSDS that you reviewed show  
3 signs and symptoms that you could expect for  
4 exposure to 2-ethylhexyl acetate?

5 **A. Yes.**

6 **Q.** And is that something you would rely upon  
7 in treating a patient?

8 **A. Yes.**

9 **Q.** And what were the signs and symptoms for  
10 exposure to 2-ethylhexyl acetate?

11 MS. DO: Your Honor, again, I have to object.  
12 Calls for hearsay. The doctor is, essentially,  
13 reading from the document.

14 THE COURT: Overruled.

15 THE WITNESS: It talks about ways that you can  
16 inhale it. You can get it in your eyes, skin, or  
17 ingestion. It talks about handling and storage.  
18 It talks about its stability. And then it talks  
19 about the LD50.

20 **Q.** BY MR. HUGHES: And does it -- do you  
21 know what the signs and symptoms would be for  
22 someone exposed to that chemical?

23 **A. I have to read it. It says, skin**  
24 **irritation in guinea pigs was moderate. Eye**  
25 **irritation in rabbits were slight. And skin**

1 **sensitization in humans were none.**

2 **Q.** What does "skin sensitization" mean?

3 **A. Well, that's if you can become allergic**  
4 **to something. So if you're sensitized to**  
5 **something, then you -- then the next time you see**  
6 **it, you can become allergic to it.**

7 **Q.** And was an LD50 study done for that  
8 chemical, 2-ethylhexyl acetate?

9 **A. Yes. And it was greater than**  
10 **5,000 milligrams per kilogram, which is a lot.**

11 **Q.** The -- Ms. Sy's report indicates trace  
12 amounts of alpha-terpineol were detected in  
13 Item 500. And Item 500, if you would assume, is a  
14 can containing wood. Did you review an MSDS for  
15 alpha-terpineol?

16 **A. Yes.**

17 **Q.** Do you know what the signs and symptoms  
18 would be based on your review of the MSDS for  
19 exposure to alpha-terpineol?

20 **A. It says, chronic effects not available.**  
21 **Toxic effects on humans. It says, very hazardous.**  
22 **It's very hazardous in case of ingestion.**  
23 **Hazardous in case of skin contact. It's an**  
24 **irritant.**

25 **Q.** And is there an LD50 that's been

1 performed on that chemical?

2 **A. No. This chemical is -- according to**  
3 **this is a common thing in different, like, pine**  
4 **oils. It's a very common chemical.**

5 **Q.** Now, how about the final chemical  
6 mentioned this -- negative terpinen-4-ol?

7 **A. Well, I mean, it's commonly found in tea**  
8 **tree oil. The potential health effects can cause**  
9 **eye or skin irritation, harmful if swallowed. It**  
10 **cause irritation to the digestive tract. It can**  
11 **cause respiratory tract irritation and may be**  
12 **harmful if inhaled.**

13 **Q.** And was this chemical subjected to an  
14 LD50 test?

15 **A. It was. Again, large amounts. 1300 for**  
16 **oral -- 1300 milligrams per kilogram for a rat.**  
17 **And for skin for a rabbit, it was 25- -- greater**  
18 **than 2500 milligrams per kilogram, so a lot.**

19 **Q.** And, Doctor, assuming hypothetically that  
20 these items were found in a log that got burned at  
21 the scene, would you expect -- how would you expect  
22 those chemicals to affect the people who were  
23 around the smoke?

24 MS. DO: Objection, Your Honor. Foundation.

25 THE COURT: Sustained.

1 **Q.** BY MR. HUGHES: First of all, would you  
2 expect, based on your training and experience, to  
3 find trace amounts of wood oils in burned wood  
4 smoke?

5 MS. DO: Objection. Foundation and leading.

6 THE COURT: Sustained.

7 **Q.** BY MR. HUGHES: Doctor, if people were --  
8 I'm giving you a hypothetical. If people were  
9 exposed to wood smoke for a short period of time,  
10 say, under 15 minutes, and other people were  
11 exposed to the same wood smoke -- smoke for several  
12 hours, two hours or more, if there was any toxic  
13 substance in the wood smoke, which group would you  
14 expect to see succumb to that toxic effect?

15 MS. DO: Objection. Foundation, Your Honor.

16 THE COURT: Sustained as to foundation.

17 **Q.** BY MR. HUGHES: Doctor, in determining  
18 how to treat a patient, do you have to review the  
19 circumstances of how they become injured?

20 **A. Yes.**

21 **Q.** And how important is that in making a  
22 determination -- or an opinion on your part as to  
23 what is wrong with the patient?

24 **A. Very important.**

25 **Q.** If you had a patient who came into your

1 department who had been exposed to wood smoke for  
2 10 or 15 minutes, and the patient's mother brings  
3 the patient, had been exposed to that same wood  
4 smoke for several hours without effect, would you  
5 consider the wood smoke to be a likely cause of why  
6 a patient was presenting in the hospital?

7 MS. DO: Objection. Foundation and leading.

8 THE COURT: It's hypothetical. Overruled.

9 If you can answer that, Dr. Dickson.

10 THE WITNESS: Yes. People that are exposed  
11 longer obviously would have symptoms greater than  
12 shorter-duration exposure.

13 **Q.** BY MR. HUGHES: Doctor, in reaching the  
14 determ- -- the opinions that you've testified to  
15 previously about the cause of death for James  
16 Shore, Kirby Brown, and Liz Neuman, did you also  
17 consider the possibility that -- or did you  
18 consider evidence regarding 2007 and 2008 sweat  
19 lodges?

20 **A. Yes.**

21 **Q.** And, Doctor, assuming hypothetically a  
22 witness in this case -- and I'm talking about lay  
23 witnesses. They're not doctors who are trained to  
24 make medical diagnosis, but lay witnesses who --  
25 who don't have medical backgrounds.

1 Assuming hypothetically a lay witness  
2 testified that in 2007 and 2008, they saw people  
3 coming out of Mr. Ray's sweat lodge ceremonies with  
4 very red skin but they didn't see people coming out  
5 of other lodges not run by Mr. Ray with that very  
6 red skin, can that be a factor that would help you  
7 in determining whether or not toxins were at play  
8 in this case?

9 **A. It probably wouldn't be a factor. And**  
10 **you can have it in either way. You can have a skin**  
11 **irritant that could cause red skin, or being really**  
12 **hot can cause red skin.**

13 **Q.** Can -- you mentioned being really hot can  
14 cause red skin. Can you explain how that could  
15 happen.

16 **A. Well, it's a physiologic response. We**  
17 **talked a little bit earlier. It's when your body**  
18 **is hot, one of the mechanisms it uses is it dilates**  
19 **the arteries and veins in your skin to let that**  
20 **heat off. Now, that can work to your advantage if**  
21 **it's cooler outside, or can it work to your**  
22 **disadvantage if it's hotter outside. Because then**  
23 **you can absorb more heat.**

24 **But generally that's a physiologic**  
25 **response initially to being hot, to dilate your**

1 skin -- arteries and veins so that you can get rid  
2 of heat. And that will make you red.

3 Q. With respect -- again, talking about this  
4 hypothetical. If a witness also testified that in  
5 addition to seeing this red skin in participants  
6 coming out of Mr. Ray's sweat lodge ceremonies and  
7 not others, the witness also testified that they  
8 saw people coming out vomiting -- occasionally  
9 vomiting but did not see that sign in people who  
10 came out of ceremonies held on the same property by  
11 people other than Mr. Ray, can that factor in  
12 addition to seeing the red skin affect your  
13 determination of whether or not toxins were at play  
14 in 2009?

15 A. You can vomit from toxins. You can vomit  
16 from heat illness.

17 Q. Is there -- and, Doctor, let's say,  
18 again, on this hypothetical, you had a witness  
19 testify that they saw people who appeared  
20 unresponsive, laying on the ground, their eyes  
21 rolled back, and, again, they saw this pattern  
22 where this was something seen in participants  
23 from -- at Angel Valley in Mr. Ray's sweat lodge  
24 ceremonies but not in other people's ceremonies --

25 MS. DO: Your Honor, I object.

1 May we approach?

2 THE COURT: Why don't we just go ahead and  
3 have the noon recess at this time and start a bit  
4 earlier. Let's do it that way.

5 So, ladies and gentlemen, we will take  
6 the noon recess at this time. Please remember the  
7 admonition. Please be reassembled at 10 minutes  
8 after 1:00, so about -- a little bit shorter time.  
9 And you're excused at this time.

10 And you are too, Dr. Dickson. Remember  
11 that rule of exclusion. Thank you, sir.

12 (Proceedings continued outside presence  
13 of jury.)

14 THE COURT: Now, there was an objection. And  
15 rather than have a bench conference -- I know  
16 Mr. Hughes used the word "pattern." And a number  
17 of times you've expressed your dislike of that  
18 term.

19 MS. DO: Yes, Your Honor. It is that issue.  
20 But I also think that Mr. Hughes, at least based  
21 upon my understanding of the Court's ruling,  
22 though, that it has clearly gone beyond the scope  
23 of what the Court indicated would be allowed.

24 I understood Mr. Hughes to state his  
25 intention that he was going to ask the witness

1 whether or not people becoming ill under whatever  
2 circumstances at Mr. Ray's 2007 and 2008 sweat  
3 lodge ceremonies would bear on the cause of death  
4 or illnesses in 2009.

5 Mr. Hughes has looped into that  
6 hypothetical a comparison of a pattern of Mr. Ray's  
7 sweat lodge ceremonies compared to nonJRI sweat  
8 lodge ceremonies. I think that's inappropriate.  
9 And the use of the word "pattern" repeatedly in  
10 this hypothetical essentially tells the jury that  
11 we're talking about propensity as opposed to  
12 physical, medical causation.

13 THE COURT: I thought I heard "pattern" just  
14 once.

15 Mr. Hughes.

16 MR. HUGHES: Your Honor, I did use the word  
17 "pattern" once. I was trying not to use that word,  
18 but I did use it once. I didn't use it multiple  
19 times.

20 Again, I don't believe this evidence  
21 suggests propensity. The questions are targeted  
22 towards the causation element. And I'm trying to  
23 ask targeted, leading -- essentially, leading,  
24 targeted questions on that causation issue.  
25 It's -- it's not pertaining to the propensity

1 issue. And I know we've been down that -- and  
2 discussed that multiple times in the past.

3 MS. DO: Your Honor, I'll correct myself. I  
4 think Mr. Hughes did use the word, pattern, once.  
5 But the import of the questions, multiple  
6 questions, was to compare a pattern of Mr. Ray's  
7 sweat lodge ceremonies to nonJRI. And I didn't  
8 understand that to be the Court's allowance of this  
9 evidence as to cause -- to physical, medical cause.

10 And, secondly, I think that the problem  
11 now for me with Mr. Hughes leading this witness  
12 into this area is that to the first three or four  
13 questions -- leading questions, he said no.

14 THE COURT: I realize that. So I don't --

15 MS. DO: Well, my concern --

16 THE COURT: -- I'm wondering why you're --

17 MS. DO: My concern --

18 THE COURT: -- bringing this up.

19 MS. DO: I'm sorry, Your Honor.

20 My concern is that the next question that  
21 will be leading -- the ultimate question that will  
22 be leading is -- you know -- do these events, these  
23 prior events, bear on the cause of death in 2009?

24 And given what the -- the witness has  
25 said to the specific questions, I don't see how

1 he's going to be able to answer as yes. So my  
2 concern is that leading him into that area suggests  
3 to him that's the answer. And I think that based  
4 upon -- I'm sorry, Your Honor. One last thing --

5 THE COURT: Oh, no. Don't -- I'm not --  
6 don't -- I'm just thinking.

7 MS. DO: Thank you.

8 THE COURT: Please, Ms. Do, continue.

9 MS. DO: Thank you.

10 Based upon the -- the testimony the Court  
11 has heard, again, this is now a witness who is  
12 testifying. And it doesn't sound to me that this  
13 expert is saying that this is information  
14 reasonably relied upon to opine cause of death  
15 in 2009. There is -- there is a logical disconnect  
16 here. And I think the witness is establishing  
17 that.

18 THE COURT: And that -- that is a foundation  
19 objection in that -- the standard that Mr. Hughes  
20 hasn't gotten to that question either.

21 MR. HUGHES: I haven't, Your Honor. I'm  
22 trying to establish foundation at this point.  
23 Again, I think it's appropriate to ask the witness  
24 to draw opinions from evidence that has been  
25 adduced at trial. And the evidence that has been

1 adduced through the Hamiltons and the Mercers is  
2 not only about things observed in sweat lodges  
3 conducted by Mr. Ray but also about -- in 2007  
4 and 2008, but the things that were not observed or  
5 were observed to the negative of other participants  
6 in other sweat lodges. And that's -- my questions  
7 are limited to that.

8 It's -- it's appropriate to ask a  
9 witness, an expert in particular, to draw the  
10 conclusion based on the testimony that's come in.

11 THE COURT: Ms. Do, anything else on this  
12 point?

13 MS. DO: Well, if the Court is -- is inclined  
14 to allow Mr. Hughes to continue this line of  
15 questioning, again, I don't think it's appropriate  
16 for Mr. Hughes to throw into the hypothetical  
17 nonJRI sweat lodge ceremonies.

18 Now -- now we're comparing -- essentially  
19 I -- that seems to me it does go to pattern and  
20 propensity and arguably inference of whether there  
21 is knowledge or notice.

22 This -- this is a medical doctor who is  
23 here to testify about medical cause, physical  
24 cause. And so the only thing that's relevant is  
25 what, if anything, has occurred through Mr. Ray's

1 prior sweat lodge ceremonies and how that might --  
2 though I don't see it, how that might bear on the  
3 cause of death or cause of illnesses in 2009.

4 So I just -- I have trouble seeing the  
5 connection, Your Honor. And I think that  
6 Mr. Hughes has gone beyond what I understood the  
7 Court to allow.

8 THE COURT: It would be best to not use the  
9 word "pattern." I believe the questions are  
10 consistent with the rulings -- previous rulings.

11 MS. DO: Your Honor, may I have one moment?

12 THE COURT: Yes.

13 MR. LI: Your Honor, just -- just -- because  
14 we want to preserve the record here. And if we  
15 could not -- we believe the pattern questions to be  
16 improper and to implicate potential mistrial  
17 issues.

18 And if we could preserve the record on  
19 that particular issue as to whether or not -- you  
20 know -- that that particular question provoked a  
21 mistrial in light of all the various testimony  
22 here. And it's a question just like --

23 THE COURT: So you're making that record right  
24 now.

25 MR. LI: Either -- either -- yes, Your Honor.

1 THE COURT: Okay. Well, Mr. Hughes, I guess  
2 there is technically a pending motion right now --

3 MR. LI: And, Your Honor --

4 THE COURT: -- Mr. Hughes.

5 Go ahead. Go ahead, Mr. Li. Go ahead  
6 and finish up.

7 MR. LI: Well, here's the problem: I mean, as  
8 I see the testimony right now, the witness said  
9 that he would not -- he would not -- you know -- he  
10 would not think that red skin has any impact on any  
11 further diagnosis later on down the road. I think  
12 he also said -- I think the question was about  
13 vomiting. Vomiting. And that would not be  
14 indicative of anything.

15 I'm not sure what other questions there  
16 are. In light of this sort of reasoning, he's  
17 making -- he's making a logical conclusion, which  
18 is that there are multiple causes for various  
19 symptoms that are nonspecific.

20 And so, as a consequence -- you know --  
21 he can't draw that -- that conclusion, which is  
22 exactly the logical point we've been trying to make  
23 for some time about the causation issue here.  
24 There are a lot of multiple causes for nonspecific  
25 symptoms.



1 And I think that the problem is that when  
2 Mr. Hughes uses the word "pattern" in the questions  
3 and when he's making the comparison to other  
4 people's sweat lodge ceremonies as part of his  
5 question, to which the witness then responds in the  
6 negative, we are creating exactly the propensity  
7 issue that -- that we -- that the defense has had  
8 an issue with. And so that's the record I'm trying  
9 to make.

10 THE COURT: Mr. Hughes.

11 MR. HUGHES: Your Honor, I was endeavoring not  
12 to use the word "pattern." I don't think it's  
13 inappropriate to use the word "pattern," but I  
14 realize where we're at today, three months into  
15 trial, that word carries baggage with it. I was  
16 endeavoring not to use it.

17 I think it's -- it is an appropriate  
18 comment on the evidence that's come in so far and  
19 it's appropriate. I think it's an appropriate way  
20 to summarize the evidence.

21 The jury has heard the testimony about  
22 Mr. Ray's ceremonies in the past and other people's  
23 ceremonies. The jury also knows what the lawyer  
24 says is not evidence. And given all of that,  
25 Your Honor, I think that the questions have been

1 appropriate to this point.

2 I've been trying to steer through a very  
3 narrow course. And -- and I will endeavor not to  
4 use the word "pattern" in the future, although,  
5 again, I do think that -- that it's appropriate to  
6 use it. But because of the baggage, I'm going to  
7 attempt not to.

8 However, the testimony has been -- the  
9 questions have been tied to specific testimony the  
10 witnesses have testified to about seeing people  
11 unconscious, essentially, on the ground with their  
12 eyes rolled back. And I didn't use the word  
13 "unconscious." About people vomiting, about the  
14 red skin. There's some -- a few others along those  
15 lines.

16 And then I'm going to ask a sum-it-all  
17 question to sum all of those together and see if  
18 that makes a difference to the witness's opinion as  
19 far as ruling something in or ruling something out.

20 MR. LI: Your Honor --

21 THE COURT: Go ahead, Mr. Li.

22 MR. LI: The problem with this prejudice is  
23 this: That if this witness has, essentially,  
24 severed the causation issue, as has Dr. Mosley, as  
25 logic dictates, that there are multiple potential

1 causes for nonspecific symptoms in different sweat  
2 lodges with different physical environments.

3 And as the Court yourself has  
4 acknowledged, that -- you know -- there are a lot  
5 of factors that go into what -- what happens inside  
6 the sweat lodge, including all those identified by  
7 Mr. Haddow.

8 And so this witness has had in two  
9 questions already severed that causation in  
10 particular with respect to the vomiting. I think  
11 it is a very important distinction here. And the  
12 problem is that through Mr. Hughes's questioning,  
13 it's not just the use of the term "pattern,"  
14 although that -- that makes it explicit that we are  
15 talking about a pattern. But it's through  
16 Mr. Hughes's questioning -- suggestive questioning  
17 that the suggestion of pattern evidence comes in.  
18 And that's explicitly not allowed under this  
19 Court's ruling and under Rule 404(b).

20 And the -- and the problem that we're  
21 facing, Your Honor, is that the prior ruling that  
22 this Court has made as to why prior sweat lodges  
23 might be admissible to show causation has been  
24 severed by not only Dr. Mosley but also now by this  
25 witness. And I think this questioning needs to

1 stop. Because eventually Mr. Hughes is fishing  
2 long enough, this guy might bite on something.

3 Okay?

4 But the reality is what we have right  
5 here, he's already said these nonspecific symptoms  
6 do not have an impact on a diagnosis in 2009.  
7 And -- and all of the prejudice that -- that is  
8 inherent in Rule 404(b) and in all of the Court's  
9 rulings that the Court has been -- you know -- has  
10 acknowledged repeatedly is being implicated by  
11 Mr. Hughes's continual questioning down this line  
12 and in the way he's questioning.

13 THE COURT: The record has been made on that.

14 Thank you.

15 (Recess.)

16 (Proceedings continued in the presence of  
17 jury.)

18 THE COURT: The record will show the presence  
19 of the defendant, Mr. Ray, the attorneys, the jury.  
20 Dr. Dickson has returned to the witness stand.

21 Mr. Hughes.

22 MR. HUGHES: Thank you, Your Honor.

23 Q. Doctor, I think where we had left off, we  
24 had been talking about prior sweat lodges in 2007  
25 and 2008. Doctor, reaching your conclusions as to

1 the cause of death of Liz Neuman and Kirby Brown  
2 and James Shore, did you consider information from  
3 2007 and 2008?

4 **A. Yes, I did.**

5 **Q.** And did you -- if -- if a witness had  
6 testified in this case that people displayed kind  
7 of a red looking skin, is that something that you  
8 considered?

9 **A. Yes.**

10 **Q.** And if a witness testified that people  
11 may have been -- and, again, we're talking about  
12 lay witnesses who would not be capable of reaching  
13 a medical opinion. But people testified about  
14 people who would be laying on the ground with their  
15 eyes rolled back and unresponsive. Is that  
16 something you would have considered?

17 **A. Yes.**

18 **Q.** And how about people that were vomiting?  
19 Is some something?

20 **A. Yes.**

21 **Q.** And about people who were maybe  
22 combative?

23 **A. Yes.**

24 **Q.** How about a person who was all tensed up,  
25 couldn't move their muscles really?

1 **A. Yes.**

2 **Q.** And a person had to be taken to, I think,  
3 a bathtub and have a shower put on them for some  
4 period of time.

5 **A. Correct.**

6 **Q.** Can you tell us what it is about those  
7 things that influenced your decision about the  
8 causes of death of Liz Neuman, Kirby Brown, and  
9 James Shore.

10 **A. Looking -- looking for signs and symptoms**  
11 **that -- what could be causing this? And the ones**  
12 **that I read were similar findings in people that**  
13 **were exhibiting signs of heat exhaustion, whether**  
14 **it's nausea or vomiting. Then a lot of people with**  
15 **that step that we talked about earlier, the --**  
16 **the -- where you go from heat exhaustion to heat**  
17 **stroke with change in mental status.**

18 **And that's the -- that's the -- those are**  
19 **the signs, when somebody that was in a bathtub for**  
20 **a while unconscious, people that were having**  
21 **seizure activities, people that were acting in**  
22 **unusual manners, is the concern for these people**  
23 **who are having signs and symptoms of heat stroke in**  
24 **the past.**

25 **Q.** And, Doctor, you testified, I believe,

1 towards the beginning of your testimony today that  
2 you had actually seen patients in your emergency  
3 department who had been exposed to  
4 organophosphates.

5 **A. Yes, I have.**

6 **Q.** Have you ever had a patient who actually  
7 died from organophosphates?

8 **A. I have not.**

9 **Q.** Have you ever seen a patient who was  
10 critically ill from organophosphates?

11 **A. Generally, no. In today's environment,**  
12 **they are -- the concentrations are pretty low. So**  
13 **mostly it's a drooling. And we treat it with**  
14 **atropine. And one or two doses normally solves the**  
15 **problem. There is in the literature people that**  
16 **take these massive amounts of medication and the --**  
17 **and another antidote. I've never seen a patient**  
18 **that had gone that far.**

19 **Q.** How about the patients you testified  
20 you've seen who were the farm workers working with  
21 industrial organophosphates? Have you seen any of  
22 them who were even critically ill?

23 **A. No.**

24 **Q.** And then you mentioned military personnel  
25 who had -- did you say a crop duster dropped

1 organophosphates on them?

2 **A. Correct.**

3 **Q.** Did you see any of them that were  
4 critically ill?

5 **A. No. Just drooling was the most that I**  
6 **saw. And then one or two doses of atropine and**  
7 **they were better.**

8 **Q.** In reaching your determination as to the  
9 cause of death of Ms. Neuman, Ms. Brown, and  
10 Mr. Shore, did you consider whether other factors,  
11 such as organophosphates, could have played a role?

12 **A. Again, when you go through the medical**  
13 **records, those doctors, as I said earlier, did a**  
14 **good job. When you have a patient like that, you**  
15 **need to look through all the different causes. And**  
16 **they considered it, and they gave good reasons why**  
17 **it wasn't evidence of the -- what -- they're called**  
18 **"toxidromes." The other things, like cholinergic**  
19 **or organophosphate, anticholinergic, carbon**  
20 **monoxide poisoning, drugs. They looked or**  
21 **attempted to treat any of those and, basically,**  
22 **checked off that they ruled them out.**

23 **Q.** Do you know whether some patients  
24 exhibited signs and symptoms consist with a  
25 cholinergic or an anticholinergic toxidrome?

1 **A. Say the question again. I'm sorry.**

2 **Q. Did any of the 18 patients who went to**  
3 **the hospital -- do you know whether any of them**  
4 **exhibited signs and symptoms consistent with a**  
5 **cholinergic or an anticholinergic toxidrome?**

6 **A. Nobody fell into that category. We**  
7 **talked a little bit earlier, some people, some of**  
8 **their symptoms could be partly cholinergic. Some**  
9 **of their symptoms could be anticholinergic. So**  
10 **when you have a toxidrome, you need to put them**  
11 **into the box. And nobody fell into any of those**  
12 **boxes. So no.**

13 **Q. Did some patients display symptoms of one**  
14 **of those toxidromes and other patients display**  
15 **symptoms of another of the toxidromes?**

16 **A. Well, like, we can take an example of the**  
17 **pupils. Some were dilated. Some were pinpoint.**  
18 **Those are generally opposite toxidromes. So most**  
19 **people were dry. That's more of a -- of an**  
20 **anticholinergic versus cholinergic. So they had**  
21 **symptoms -- they could have been symptoms, but they**  
22 **didn't fit into the box.**

23 **Q. Would you expect that people who had been**  
24 **exposed to the same toxic substance, assuming there**  
25 **was one, would display similar symptoms?**

1 **A. Generally, yes.**

2 **Q. You mentioned, for example, the eye size,**  
3 **miosis, just a moment ago. Did you consider the**  
4 **fact that, I believe, 4 of the patients displayed**  
5 **miosis and the other 14 did not?**

6 **A. Correct.**

7 **Q. And what conclusions were you able to**  
8 **draw from that?**

9 **A. Well, most of the patients that were sick**  
10 **had those -- either miosis -- the -- the very sick**  
11 **patients had miosis. And one had mydriasis, which**  
12 **is the dilated pupils. So unfortunately in**  
13 **medicine, not much is 100 percent.**

14 **So you can't hang your hat, so to speak,**  
15 **on just the pupil. You have to look at the big**  
16 **picture. So you've got to look at the whole**  
17 **picture. And in looking at the picture and what**  
18 **the docs did there, it didn't seem like it fit into**  
19 **any of those toxidromes.**

20 **Q. Thank you, Doctor.**

21 **I don't believe I have any other**  
22 **questions.**

23 **THE COURT: Thank you, Mr. Hughes.**

24 **Ms. Do, when you're ready.**

25 **MS. DO: Thank you, Your Honor.**

# CROSS-EXAMINATION

2 **BY MS. DO:**

3 **Q. Good afternoon, Dr. Dickson.**

4 **A. Hello.**

5 **Q. I just saw you yesterday; right?**

6 **A. Yes.**

7 **Q. Okay. Just so the jurors know, you and I**  
8 **have met before; correct?**

9 **A. Correct.**

10 **Q. The first time you and I met was in**  
11 **January of 2011?**

12 **A. Correct.**

13 **Q. Mr. Li and I traveled to Yuma. And we**  
14 **met you down there; correct?**

15 **A. Yes.**

16 **Q. And then we had a second and final**  
17 **opportunity to speak. And that was yesterday?**

18 **A. Correct.**

19 **Q. All right. And each time you and I have**  
20 **spoken, Mr. Hughes has always been present?**

21 **A. Correct.**

22 **Q. And so has Detective Diskin?**

23 **A. Yes.**

24 **Q. And just so everyone knows what was said**  
25 **and there isn't any dispute, we've always recorded**

1 **our conversations; correct?**

2 **A. Yes.**

3 **Q. Let me review with you your background**  
4 **and qualifications, and then we'll move in to talk**  
5 **about the substance of this case.**

6 **You studied at Western University of**  
7 **Health Sciences; is that correct?**

8 **A. Correct.**

9 **Q. You graduated in June of 2000?**

10 **A. Correct.**

11 **Q. You did your residency in emergency**  
12 **medicine at Kern Medical Center; is that correct?**

13 **A. Correct.**

14 **Q. And that's located in Bakersfield,**  
15 **California?**

16 **A. Yes, it is.**

17 **Q. The -- the Kern Medical Center is known**  
18 **as a teaching school for UCLA; correct?**

19 **A. It's an affiliated teaching hospital.**

20 **Yeah.**

21 **Q. Okay. And by a "teaching hospital," can**  
22 **you explain to the jury what that is.**

23 **A. When you're -- after you finish medical**  
24 **school, you go to residency. And residency is your**  
25 **specialty training. And so you will be -- as a**

1 resident, I saw patients but under the guidelines  
2 and under the watchful eye of attending physicians.  
3 And you get -- as you start out, you don't know  
4 very much. And as you work through, you work with  
5 your physician -- the attending physicians until  
6 you're proficient.

7 Q. Okay. And UCLA has its own separate  
8 medical school; correct?

9 A. Correct.

10 Q. And Kern Medical is a teaching facility.  
11 It's not part of the UCLA Medical School; correct?

12 A. It is not part of the UCLA Medical School  
13 building. No.

14 Q. Okay. And UCLA has its own medical  
15 building; correct?

16 A. I'm sure it does.

17 Q. Its own medical hospital?

18 A. Correct.

19 Q. All right. Now, you told the jury that  
20 you have what is called a "doctor of osteopathic  
21 medicine." That's a DO --

22 A. Correct.

23 Q. -- behind your name; correct?

24 A. Yes.

25 Q. Kind of like mine. You have a DO as

1 opposed to an MD. Could you tell the jury what the  
2 difference is between the two.

3 A. In medical school you do additional --  
4 several hours a week working on the musculoskeletal  
5 system. So bones and muscles, treating, diagnosing  
6 symptoms, related to that system.

7 Q. Okay. And MD, which is a medical doctor,  
8 is considered the traditional, conventional medical  
9 school; correct?

10 A. I wouldn't say that. I would say that  
11 they're both -- they're on a similar tract. They  
12 have the same -- same licensure, same scope of  
13 practice.

14 Q. I understand that. You and I have  
15 previously talked about this issue; correct?

16 A. Well, sort of, yeah.

17 Q. Okay. And I think on a previous  
18 conversation, you did acknowledge that an MD is  
19 what is considered -- considered as traditional  
20 medicine; correct?

21 A. What they call it is "allopathic" --

22 Q. Yes.

23 A. -- and "osteopathic."

24 Q. Okay. And what's -- allopathic is an MD;  
25 correct?

1 A. Allopathic is MD, and osteopathic is a  
2 DO.

3 Q. All right. Now, you are currently in  
4 private practice; correct?

5 A. Yes.

6 Q. And you work for a private group called  
7 "Southwest Emergency Physicians"; correct?

8 A. Yes.

9 Q. And that is a private group of, I  
10 believe, seven partner doctors?

11 A. Correct.

12 Q. And you're one of the seven?

13 A. Correct.

14 Q. And that private group has a private  
15 contract with the Yuma Regional Medical Center;  
16 correct?

17 A. Correct.

18 Q. And on that private contract is how you  
19 work as an attending physician at the Yuma Regional  
20 Medical Center?

21 A. Correct.

22 Q. That also, I think, is something that you  
23 previously told me you've been doing since July of  
24 2004?

25 A. July of 2004. Correct.

1 Q. All right. So for about seven years,  
2 you've been an attending physician under a private  
3 contract with the Yuma Regional Medical Center?

4 A. Yes.

5 Q. And excluding your residency and your  
6 moonlighting, that would be your first job in the  
7 practice of medicine; correct?

8 A. If you excluded my residency and the  
9 moonlighting, yes.

10 Q. All right. Now, you also told the jury  
11 that you are an EMS medical director for the Yuma  
12 Regional Medical Center. Is that correct?

13 A. Yes.

14 Q. And under that title, you, essentially,  
15 speak to first responders; correct?

16 A. That's part of it. Yeah.

17 Q. Like EMS, paramedics?

18 A. Paramedics.

19 Q. You also speak to fire fighters, I think  
20 you mentioned?

21 A. Yes.

22 Q. And we'll get to this in more detail.

23 But one of the things that you do is you lecture or  
24 you teach them to recognize the signs and symptoms  
25 of heat illnesses?

- 1 **A. That's one of them. Yes.**  
 2 **Q.** Okay. You mentioned that you're board  
 3 certified in two areas. One is emergency medicine;  
 4 correct?  
 5 **A. Correct.**  
 6 **Q.** And the other is -- and the full name is  
 7 undersea and hyperbaric medicine; correct?  
 8 **A. Correct.**  
 9 **Q.** And that has to do with diseases or  
 10 disorders that you might see, for example, in  
 11 diving.  
 12 **A. Correct.**  
 13 **Q.** Okay. You are not a forensic  
 14 pathologist?  
 15 **A. No, I am not.**  
 16 **Q.** Okay. And my understanding is that your  
 17 training or education in pathology is limited to  
 18 doing a one-month rotation in pathology during  
 19 medical school. Correct?  
 20 **A. Correct.**  
 21 **Q.** And outside of that one-month rotation,  
 22 you have no other training, education, or  
 23 experience in forensic pathology; correct?  
 24 **A. In forensic pathology, no.**  
 25 **Q.** All right. And a forensic pathologist,

- 1 the jurors have heard from too, are what are  
 2 typically called medical examiners; correct?  
 3 **A. Yes.**  
 4 **Q.** Whose job it is is to determine or  
 5 investigate death; correct?  
 6 **A. Correct.**  
 7 **Q.** And determine causes of death; correct?  
 8 **A. Correct.**  
 9 **Q.** And manner?  
 10 **A. And manner.**  
 11 **Q.** The manner of death?  
 12 **A. Correct.**  
 13 **Q.** And that's not something that you do?  
 14 **A. No, it's not.**  
 15 **Q.** All right. And you understand in this  
 16 case, the state does have two medical examiners?  
 17 **A. They have two medical in what?**  
 18 **Q.** In this case.  
 19 **A. Okay.**  
 20 **Q.** Do you know that?  
 21 **A. I don't.**  
 22 **Q.** Well, you -- I understand you were  
 23 retained to review records in this case.  
 24 **A. Correct.**  
 25 **Q.** And part of those records included the

- 1 two autopsy reports --  
 2 **A. Correct. Three --**  
 3 **Q.** -- or three autopsy --  
 4 **A. Three autopsy reports.**  
 5 **Q.** All right. And so you know Dr. Lyon;  
 6 right?  
 7 **A. Not personally.**  
 8 **Q.** But you know he's a medical examiner in  
 9 this case?  
 10 **A. Correct.**  
 11 **Q.** And Dr. Mosley?  
 12 **A. Yes. I'm sure they are. I don't**  
 13 **remember the names of the doctors that did the**  
 14 **autopsies. Sorry.**  
 15 **Q.** All right. So it's Dr. Mosley and  
 16 Dr. Lyon. Okay?  
 17 **A. Okay.**  
 18 **Q.** Now, you understand, then, based upon  
 19 your review of this case, that the state does have  
 20 two medical examiners who conducted a death  
 21 investigation in this case --  
 22 **A. Yes.**  
 23 **Q.** -- right?  
 24 And I understand you've reviewed their  
 25 reports. But have you ever spoken to Dr. Mosley?

- 1 **A. No.**  
 2 **Q.** Have you ever spoken to Dr. Lyon?  
 3 **A. No.**  
 4 **Q.** And obviously you did not yourself  
 5 conduct the autopsies?  
 6 **A. No.**  
 7 **Q.** You wouldn't be qualified to do that;  
 8 right?  
 9 **A. No.**  
 10 **Q.** So in terms of their death  
 11 investigations, the conclusions that Dr. Mosley and  
 12 Dr. Lyon reached regarding cause and manner of  
 13 death, you certainly would defer to them since they  
 14 conducted the death investigation in this case,  
 15 yes?  
 16 **A. Would I defer to them in the cause of**  
 17 **death. Yes.**  
 18 **Q.** Because they had, in addition to  
 19 reviewing the records that you reviewed, also had  
 20 their hands on the physical bodies of the -- of the  
 21 decedents during the autopsies; right?  
 22 **A. I don't know what records they have.**  
 23 **Q.** Well, we'll get to that. Assuming that  
 24 they've reviewed the same medical records you have.  
 25 All right?

- 1 **A. Okay.**  
 2 **Q.** In addition to that, they have something  
 3 that you don't, which is that they did the  
 4 autopsies, yes?  
 5 **A. Correct.**  
 6 **Q.** And so Dr. Mosley, you understand, has  
 7 reached a conclusion or an opinion as to cause of  
 8 death in this case for Ms. Neuman?  
 9 **A. Okay.**  
 10 **Q.** Did you know that?  
 11 **A. Yes. I understand. I've read that.**  
 12 **Q.** And you know that Dr. Lyon has reached a  
 13 conclusion and an opinion regarding cause of death  
 14 for Ms. Brown and Mr. Shore?  
 15 **A. Yes.**  
 16 **Q.** All right. And so whatever conclusions  
 17 or opinions they have reached regarding the cause  
 18 of death, you would defer to them since they are  
 19 the state's medical examiners in this case; yes?  
 20 **A. Yes.**  
 21 **Q.** All right. Now, do you know who  
 22 Dr. Brent Cutshall is?  
 23 **A. No. Not personally.**  
 24 **Q.** Do you know who Dr. Mark Peterson is?  
 25 **A. These are names that were on medical**

- 1 **records, but I don't know them personally.**  
 2 **Q.** I understand. Because you obviously have  
 3 also not spoken to any of the doctors who treated  
 4 any of the 18 who went to the hospital?  
 5 **A. No.**  
 6 **Q.** Do you know who Dr. Brent Cutshall  
 7 treated?  
 8 **A. No. I don't remember the names of**  
 9 **doctors specifically for each of the patients. I**  
 10 **didn't look to see who the doctor was.**  
 11 **Q.** Sure. Do you know who Dr. Mark Peterson  
 12 treated?  
 13 **A. No. Not off the top of my head. No.**  
 14 **Q.** Have you heard of Dr. Vincent Furrey?  
 15 **A. Maybe. No -- I mean, it could be one of**  
 16 **the doctors. Again, I don't look at the names of**  
 17 **the doctors. I look at the medical records of what**  
 18 **they saw.**  
 19 **Q.** The medical records, the charts and the  
 20 diagnosis of these doctors that you didn't look at  
 21 the names of; correct?  
 22 **A. Correct.**  
 23 **Q.** So then I take it you've never spoken to  
 24 Dr. Vincent Furrey?  
 25 **A. No.**

- 1 **Q.** I'll represent to you that Dr. Brent  
 2 Cutshall is the ICU doctor who treated Liz Neuman,  
 3 and Dr. Mark Peterson is the ER doctor who treated  
 4 Liz Neuman.  
 5 Any reason to dispute that?  
 6 **A. No.**  
 7 **Q.** And Dr. Vincent Furrey, I will represent  
 8 to you, treated Kirby Brown and James Shore.  
 9 **A. Okay.**  
 10 **Q.** Any reason to dispute that?  
 11 **A. No.**  
 12 **Q.** Dr. Furrey also treated others. Did you  
 13 know that?  
 14 **A. Could be.**  
 15 **Q.** Okay. Again, you've never spoken to any  
 16 of these doctors?  
 17 **A. No, I have not.**  
 18 **Q.** You yourself, you are in emergency  
 19 medicine; yes?  
 20 **A. Yes.**  
 21 **Q.** You would agree with me that when you're  
 22 looking at the possible causes for illnesses or  
 23 death in a patient, the best person who has the  
 24 best advantage -- or best vantage point would be  
 25 the doctor who treated the patient; yes?

- 1 **A. Say the question again.**  
 2 **Q.** Sure. If somebody was questioning, for  
 3 example -- let me give you a hypothetical. If  
 4 somebody was questioning your case work, your  
 5 diagnosis of a patient; yes?  
 6 **A. Yes.**  
 7 **Q.** You have something that person reviewing  
 8 your record does not have. And that is personal  
 9 experience in treating that particular patient?  
 10 **A. Yes. That's correct.**  
 11 **Q.** All right. So these doctors --  
 12 Dr. Cutshall, Dr. Furrey, and Dr. Peterson -- all  
 13 have the advantage of being there on ground zero  
 14 with their eyes and hands on these patients; yes?  
 15 **A. Yes.**  
 16 **Q.** And so because they have that advantage,  
 17 you also would defer to their medical opinions as  
 18 to what caused, for example, Ms. Neuman's demise;  
 19 yes?  
 20 **A. Can I elaborate on that?**  
 21 **Q.** Well, did you understand the question,  
 22 first?  
 23 **A. I do. I don't know if I can answer it**  
 24 **yes or no.**  
 25 **Q.** All right. Go ahead.

1 **A. One of the things I do is I'm on the**  
 2 **quality committee in our hospital. And sometimes**  
 3 **when you are the attending physician, especially in**  
 4 **emergency medicine, you don't have the whole**  
 5 **picture at the time. When you're farther down, you**  
 6 **get to see the whole picture. Things are available**  
 7 **to you that weren't available to you at that time.**

8 **ER is the classic one. A patient comes**  
 9 **in. If you see your primary doctor, your doctor**  
 10 **knows you. They know your history. As an ER**  
 11 **doctor, we are at a disadvantage. We don't know**  
 12 **anything about you, and we're trying figure it out**  
 13 **from sometimes an unconscious, unresponsive**  
 14 **patient.**

15 **So it can be difficult at that setting to**  
 16 **have all the answers of an ER when you're in the**  
 17 **ER. When you look through the full record, as more**  
 18 **things unfold, you're able to make that decision a**  
 19 **little easier.**

20 **Q. Do you have any evidence, Doctor, that in**  
 21 **this case, Dr. Brent Cutshall, for example, who had**  
 22 **Ms. Neuman in Flagstaff Medical for, I believe it**  
 23 **was, nine days had lacked any information?**

24 **A. I don't know what he knew about the**  
 25 **history. But it seems to -- as you go through the**

1 **records, there is conflicting information. There**  
 2 **is -- first some people called it a "smoke house."**  
 3 **That would imply there is smoke.**

4 **So I guess it depends on where they are**  
 5 **in the information train, how far down, how much**  
 6 **they've gotten. Sometimes when you get them**  
 7 **initially, you don't know at all, and then you have**  
 8 **to sift through it. That doctor would probably be**  
 9 **the most likely to have the most information**  
 10 **because he took care of the patient for the longest**  
 11 **period of time.**

12 **Q. I'm sorry. I might be confused. Can you**  
 13 **repeat that one more time.**

14 **A. The intensive care unit doctor was most**  
 15 **likely to get the full story as he was with the**  
 16 **patient the longest and had the ability as time**  
 17 **comes, more information comes, and you can get that**  
 18 **story better.**

19 **Q. And so if that doctor in the ICU who you**  
 20 **believe would have the most available**  
 21 **information -- you would defer to his opinion about**  
 22 **the patient he treated; correct?**

23 **A. Yes.**

24 **Q. All right. Now, when you say "history,"**  
 25 **I just want to make sure the jury understands.**

1 **You're talking about the reported circumstances**  
 2 **from the scene --**

3 **A. Correct.**

4 **Q. -- what happened on October 8, 2009?**

5 **A. Correct.**

6 **Q. You're not talking about the medical**  
 7 **history of Liz Neuman, for example, that existed**  
 8 **prior to October 8?**

9 **A. Well, that's -- medical history is**  
 10 **important. When you have somebody that comes --**  
 11 **walks into the ER and is unconscious, if they're**  
 12 **diabetic, you want to know. If they have a heart**  
 13 **history, you'd want to know. There are things that**  
 14 **certain populations of people are at risk for. So**  
 15 **that's one of the challenges at the beginning.**

16 **Normally if somebody has been in the**  
 17 **hospital longer, family, friends, can come in and**  
 18 **fill in the blanks which you don't know.**

19 **Q. I understand that. Thank you. Let me**  
 20 **make sure the jury understands your answer.**  
 21 **Medical history, for example, the record and**  
 22 **history of a patient from birth to whatever age**  
 23 **they are currently?**

24 **A. Correct.**

25 **Q. It would come from perhaps a family**

1 **physician?**

2 **A. Family physician or family member,**  
 3 **friend.**

4 **Q. And so when you said perhaps some of the**  
 5 **doctors in the hospital didn't have a history, were**  
 6 **you referring to that kind of medical history as**  
 7 **opposed to just the reported circumstances from the**  
 8 **scene?**

9 **A. Both.**

10 **Q. Have you in this case had the opportunity**  
 11 **to review the medical history, meaning from birth**  
 12 **to age 49, for Liz Neuman?**

13 **A. Just what's available in the medical**  
 14 **records.**

15 **Q. The same thing that was available to**  
 16 **Dr. Cutshall; yes?**

17 **A. Yes.**

18 **Q. And presumably Dr. Peterson, who was the**  
 19 **ER doctor who treated her before she went to ICU?**

20 **A. Correct.**

21 **Q. The same thing for Dr. Vincent Furrey on**  
 22 **Kirby Brown and James Shore?**

23 **A. Same information.**

24 **Q. So you didn't get anything new from the**  
 25 **state or anywhere else that these doctors did not**

1 have; yes?

2 **A. Not that I know of.**

3 **Q.** Okay. Now, let me review with you a  
4 little bit about your history and background of  
5 your involvement in this case. All right?

6 As the jurors have heard, there are two  
7 medical examiners who conducted the death  
8 investigation in this case, as well as numerous  
9 doctors from Flagstaff Medical, Verde Valley and  
10 Sedona Medical Center.

11 Do you know that?

12 **A. Yes.**

13 **Q.** But the state has retained you as a  
14 medical expert in this case; correct?

15 **A. Correct.**

16 **Q.** And my understanding is that you were  
17 retained on December 6, 2010.

18 **A. I believe that's the correct date.**

19 **Q.** Any reason to dispute that?

20 **A. No.**

21 **Q.** I can show you the retainer agreement if  
22 you need. But that's the date I have.

23 **A. That's fine.**

24 **Q.** When you were retained by the state, you  
25 understood that you would be coming into this trial

1 to testify regarding cause of death?

2 **A. Correct.**

3 **Q.** And cause of illnesses?

4 **A. Correct.**

5 **Q.** What the medical examiners have already  
6 done; is that correct?

7 **A. Yes.**

8 **Q.** Did the state in retaining you tell you  
9 whether or not there was any kind of a disagreement  
10 between the medical examiners on cause of death?

11 **A. No.**

12 **Q.** All right. So they didn't mention to you  
13 that there was any kind of issue in this case that  
14 needed to be repaired which prompted their hiring  
15 an outside private expert?

16 **A. No.**

17 **Q.** Mr. Hughes asked, and you said you are  
18 being paid by the hour, 400; correct?

19 **A. Correct.**

20 **Q.** Is that standard?

21 **A. For what?**

22 **Q.** Private doctors retained to testify.

23 **A. I don't know what the standard is.**

24 **Q.** All right. But it's not crazy? It's not  
25 out there?

1 **A. I don't think so.**

2 **Q.** And there is certainly nothing wrong with  
3 that, because it's your time and reviewing the  
4 records?

5 **A. Yes.**

6 **Q.** And your time being here?

7 **A. Yes.**

8 **Q.** Okay. And you should get paid for your  
9 work; yes?

10 **A. Yes.**

11 **Q.** You've done about 20 hours of work?

12 **A. Yes.**

13 **Q.** Could you tell me, approximately from  
14 December 6, 2010, when you were retained, to  
15 today's date, when about you did the bulk of those  
16 20 hours of work?

17 **A. It's been periodic through the whole  
18 time. I've gotten a few additional pieces of  
19 information and then reviewing them again before I  
20 came here just to review again.**

21 **Q.** Sure. Would you say that the majority of  
22 your work, however, those 20 hours, were done prior  
23 to finalizing the reports that we have in this  
24 case?

25 **A. Yes.**

1 **Q.** Could you give me your best estimate of  
2 how many of those 20 hours you did in this case  
3 before you wrote your report, which, I believe, was  
4 dated January 10, 2011, about 25 days after you  
5 were retained.

6 **A. Maybe two thirds.**

7 **Q.** Two thirds of those 20 hours?

8 In order for you to do your work in this  
9 case, the state on December 16, 2010, provided you  
10 with case material to review?

11 **A. Yes.**

12 **Q.** And that included the autopsy reports for  
13 all three of the decedents?

14 **A. Yes.**

15 **Q.** That included the medical records for all  
16 three decedents?

17 **A. Yes.**

18 **Q.** And the medical records for the other 15  
19 participants who went to the hospital?

20 **A. Yes.**

21 **Q.** Did you review all of those materials  
22 before you wrote your report?

23 **A. Say the thing again.**

24 **Q.** Did you review all of those materials?

25 **A. What were the things? The --**



1 Q. The autopsy report --  
 2 A. **The medical records. And what was it?**  
 3 Q. The autopsy reports, the medical records  
 4 for the decedents and the medical records for the  
 5 surviving participants.  
 6 A. **Yes.**  
 7 Q. Now, when the state retained you to  
 8 review those case materials, they asked you to come  
 9 to whatever opinion or conclusion you might have  
 10 regarding the cause of death; yes?  
 11 A. **Yes.**  
 12 Q. And so in looking at the autopsy reports,  
 13 for example, you knew what Dr. Lyon and Dr. Mosley  
 14 had on the date of their autopsy reports concluded  
 15 were cause of death?  
 16 A. **Yes.**  
 17 Q. And you believe your opinion today to  
 18 this jury is consistent with what Dr. Mosley  
 19 concluded as a cause of death for Liz Neuman?  
 20 A. **Yes.**  
 21 Q. And you believe today that your opinion  
 22 given to this jury regarding the cause of death for  
 23 Ms. Brown and Mr. Shore is consistent with  
 24 Dr. Lyon?  
 25 A. **Yes.**

1 Q. You also had told the jurors -- jurors a  
 2 number of times that in reviewing the medical  
 3 records, it was clear that the ER doctors or ICU  
 4 doctors were puzzling over a possible toxidrome?  
 5 A. **Yes.**  
 6 Q. Meaning they had poison on the mind?  
 7 A. **Correct.**  
 8 Q. And you believe they did a diligent -- a  
 9 good job of working through that issue?  
 10 A. **Yes.**  
 11 Q. And, as you sit here today, you believe  
 12 that Dr. Cutshall, for example, has ruled out  
 13 organophosphates; yes?  
 14 A. **Yes.**  
 15 Q. And so you believe that your testimony in  
 16 this case is consistent with Dr. Cutshall's  
 17 opinions about Liz Neuman's cause of death;  
 18 correct?  
 19 A. **Yes.**  
 20 Q. Then after receiving the materials  
 21 provided to you by the state, 25 days later you  
 22 wrote a report?  
 23 A. **Yes.**  
 24 Q. In which you concluded that the cause of  
 25 death for all three decedents, based upon the same

1 materials that the medical examiners had, was heat  
 2 stroke?  
 3 A. **Yes.**  
 4 Q. Which you believe was consistent with the  
 5 ER and the ICU doctors?  
 6 A. **Yes.**  
 7 Q. Now, three days after you wrote your  
 8 report, you were then provided a copy of Dr. Ian  
 9 Paul's report; is that right?  
 10 A. **Yes.**  
 11 Q. And Dr. Paul you knew has been retained  
 12 by the defense as a medical examiner in this case?  
 13 A. **Yes.**  
 14 Q. When the state provided you with  
 15 Dr. Paul's report -- and just for identification,  
 16 let me show you Exhibit 1000. Would you confirm  
 17 for me if that is the report you received from the  
 18 state.  
 19 A. **Yes.**  
 20 Q. Once receiving that from the state, you  
 21 read it; correct?  
 22 A. **Yes.**  
 23 Q. Now, did the state also provide you with  
 24 any of Dr. Paul's credentials so that you could  
 25 perhaps gauge whether or not he's qualified first?

1 A. **Yes.**  
 2 Q. And you understood from his credentials  
 3 that he worked in the capacity similar to  
 4 Dr. Mosley and Dr. Lyon, and that is he's a medical  
 5 examiner for the State of New Mexico?  
 6 A. **Correct.**  
 7 Q. And based upon your reviewing his  
 8 credentials, you agree with me that he is  
 9 qualified?  
 10 A. **Yes.**  
 11 Q. Dr. Mosley said his credentials were  
 12 impeccable. Would you agree with that?  
 13 A. **I couldn't say. I'm not a forensic**  
 14 **pathologist.**  
 15 Q. Sure. And so from your review of his  
 16 credentials, you understand that Dr. Paul does what  
 17 you do, emergency medicine, at one time?  
 18 A. **I wouldn't say he's a practicing**  
 19 **emergency medicine physician.**  
 20 Q. Correct. He's board certified, however.  
 21 Is that your understanding?  
 22 A. **I assume he is. Yes.**  
 23 Q. And on top of that, he's also a forensic  
 24 pathologist?  
 25 A. **Okay.**

1 Q. So, in essence, he combined the  
2 experience and training and education that you have  
3 as emergency medicine and the training and  
4 education and experience that Dr. Mosley and  
5 Dr. Lyon have as medical examiners?

6 A. **Can I expand on that?**

7 Q. Sure. But let me make sure you  
8 understand the question first.

9 A. **Okay.**

10 Q. It calls for yes or no. So is that yes  
11 or no?

12 A. **Well, I can't answer with yes or no.**

13 Q. All right. Go ahead.

14 A. **My concern is, is when you read through  
15 his record, there is an -- there is an apparent  
16 misunderstanding of the concept of heat stroke --**

17 Q. Let me stop you there. We're going to  
18 talk about the substance of the report. What I'm  
19 trying to get an answer to is the question I put in  
20 front of the jury.

21 Dr. Paul, based upon your review of his  
22 credentials, you understand, combined the training,  
23 education and experience you have as an emergency  
24 medicine doctor, along with the training,  
25 education, experience of Dr. Mosley and Lyon as

1 forensic pathologists; correct?

2 A. **Everything except for the experience. He  
3 doesn't have the ER experience I do.**

4 Q. Are you saying that you know that  
5 Dr. Paul has never worked in an emergency room?

6 A. **I don't think he has seven years of  
7 emergency medicine experience.**

8 Q. Okay. Putting aside the number of years,  
9 are you telling this jury you know as a fact that  
10 Dr. Paul has never worked in an emergency room  
11 setting?

12 A. **No. I said I don't think he has seven  
13 years of emergency medicine experience.**

14 Q. He has, to your knowledge, experience in  
15 the ER?

16 A. **I don't know if he has experience in the  
17 ER. I just don't know.**

18 Q. Sure. No problem. But my question is  
19 very basic.

20 A. **Uh-huh.**

21 Q. You understand that he, basically,  
22 combines you, Dr. Mosley and Dr. Lyon?

23 A. **Minus the experience, yes.**

24 Q. All right. And, again, you've not also  
25 met Dr. Paul or spoken to him?

1 A. **No.**

2 Q. Now, after you got Dr. Paul's report on  
3 January 13, 2011, that prompted you to revise the  
4 reports you wrote in this case for the state;  
5 correct?

6 A. **Correct.**

7 Q. And you did that sometime between  
8 January 13 and January 18 of 2011?

9 A. **I don't know the exact dates. But sounds  
10 correct.**

11 Q. All right. Well, we received your  
12 revised report on January 18, so logically it would  
13 occur between the time you got the report from  
14 Dr. Paul?

15 A. **Sounds fair.**

16 Q. January 13 and January 18?

17 A. **Yes.**

18 Q. Do you know whether or not that same  
19 report by Dr. Paul has prompted anyone else in this  
20 case to revise their opinions or conclusions?

21 A. **No.**

22 Q. After you wrote your revision between the  
23 13th and 18th of 2011, that would conclude your --  
24 the bulk of your work up until recently and a few  
25 months ago; correct?

1 A. **Yes.**

2 Q. Let me jump forward to within the last  
3 few months. Some 16 months after you were retained  
4 by the state, they provided you with some  
5 additional information to review in this case; is  
6 that right?

7 A. **No. 16 months.**

8 Q. Yes.

9 A. **I was retained in December.**

10 Q. Let me go back. You could be right. You  
11 were retained December 16, 2010.

12 A. **Uh-huh.**

13 Q. Is that yes?

14 A. **Yes.**

15 Q. Mina doesn't take "uh-huh."

16 Okay. So December 6, 2010. And then on  
17 April 15, 2011, the state provided you with  
18 additional information?

19 A. **Correct.**

20 Q. And that additional information included  
21 the report that Mr. Hughes was talking to you  
22 about. And that was Dawn Sy's trace analysis; is  
23 that right?

24 A. **Yes.**

25 Q. Let me put that up on the board,

1 Exhibit 0345. And let me give you the exact -- the  
2 actual exhibit.

3 You received that report by the state on  
4 April 15, 2011?

5 MR. HUGHES: I'm sorry. Can you tell me what  
6 exhibit that was.

7 MS. DO: 345.

8 Q. BY MS. DO: Is that correct, Dr. Dickson?

9 A. **I didn't hear the question. I'm sorry.**

10 Q. That's okay. You received that report by  
11 Dawn Sy, which is dated February 4, 2010?

12 A. **Yes. That's when it's dated.**

13 Q. And so that indicates to you that Dawn  
14 Sy, the criminalist, completed her analysis on  
15 February 4, 2010?

16 A. **Correct.**

17 Q. Prior to you being retained on  
18 December 6, 2010?

19 A. **Correct.**

20 Q. You got that report, however, on  
21 April 15, 2011?

22 A. **About that time. Yes.**

23 Q. I can show you the letter, the email  
24 transmitting that to you.

25 A. **I just don't know the date. I take your**

1 **word for it. Yes.**

2 Q. Thank you. I appreciate that.

3 So on April 15, 2011, while this trial  
4 was in progress before this jury, the state sent  
5 you this report?

6 A. **Yes.**

7 Q. They had it before they retained you. Do  
8 you know why they didn't give it to you as part of  
9 your analysis in this case?

10 A. **I do not.**

11 Q. Okay. You gave some testimony to the  
12 jury about the chemicals found in Dawn Sy's  
13 analysis?

14 A. **Correct.**

15 Q. And obviously you're a medical doctor.  
16 You're not a chemist?

17 A. **Correct.**

18 Q. You're not a toxicologist?

19 A. **No, I'm not.**

20 Q. And can you explain to the jury what a  
21 toxicologist does.

22 A. **A toxicologist is somebody that does an  
23 additional two years of training. Those are the  
24 ones that you call at the poison center. And they  
25 look up the stuff on the computer same way we all**

1 **do. But they have additional training on  
2 toxicology.**

3 Q. And what you're talking about, so we're  
4 talking about the same thing, is a medical  
5 toxicologist; yes?

6 A. **Correct.**

7 Q. And a medical toxicologist goes to  
8 medical school just like you do?

9 A. **Correct.**

10 Q. They do an additional two years training?

11 A. **They normally do emergency medicine, for  
12 example, and go on to do toxicology. They can do  
13 internal medicine, things like that, and then they  
14 go on to toxicology.**

15 Q. But they specialize on the effects of  
16 various substances on the body; correct?

17 A. **Yes.**

18 Q. And I know you just told the jury that  
19 they look up things just like you do, but they also  
20 have the training and the experience beyond just  
21 pulling up stuff off the internet?

22 A. **Yes.**

23 Q. And so in this case, if the state wanted  
24 to know what effects, for example,  
25 2-ethyl-1-hexanol has on the body, they could call

1 a medical toxicologist; correct?

2 A. **Sure. Yes.**

3 Q. And you're not a medical toxicologist?

4 A. **I'm not a medical toxicologist.**

5 Q. You're also not a criminalist?

6 A. **I'm not a criminalist.**

7 Q. Dawn Sy is?

8 A. **Okay.**

9 Q. Do you know that?

10 A. **Says he's a criminalist.**

11 Q. She.

12 A. **She. Sorry.**

13 Q. So you assume she's a criminalist; right?

14 A. **That's what it says.**

15 Q. Okay. Once you got this report by Dawn  
16 Sy, only three weeks ago, on April 15, 2011, when  
17 you first looked at it, Dr. Dickson, did you know  
18 what 2-ethyl-1-hexanol was?

19 A. **No.**

20 Q. When you looked at it, when you first got  
21 it, did you know what 2-ethyl acetate was?

22 A. **No.**

23 Q. Did you know what terpineol was?

24 A. **No.**

25 Q. Okay. So you had to look all those

1 chemicals up; correct?  
 2 **A. Yes.**  
 3 **Q.** And yesterday when I met with you, you  
 4 gave me this stack of documents?  
 5 **A. Yes.**  
 6 **Q.** You have a copy in front of you?  
 7 **A. I do.**  
 8 **Q.** And this stack of documents, I would say,  
 9 is about an inch thick. Yes?  
 10 **A. Sure. Yes.**  
 11 **Q.** And it was the additional research that  
 12 you did to look up what these chemicals were;  
 13 right?  
 14 **A. Yes.**  
 15 **Q.** And from looking at the bottom of the  
 16 document, or documents, rather, it looks like you  
 17 went on the internet and printed these documents on  
 18 May 3rd, 2011?  
 19 **A. Yes.**  
 20 **Q.** So seven days ago?  
 21 **A. Yes.**  
 22 **Q.** So seven days ago you had to look up what  
 23 2-ethyl-1-hexanol was; yes?  
 24 **A. I think I looked it up before that. But**  
 25 **I printed this because I was coming here and I**

1 **wanted it printed. But, yes. I had to look it up.**  
 2 **Q.** Understood. So some of the sources that  
 3 you looked at, for example, looking through your  
 4 documents, you looked at Wikipedia?  
 5 **A. Correct.**  
 6 **Q.** And some of us may not be familiar with  
 7 Wikipedia. That's a source on line; yes?  
 8 **A. Yes.**  
 9 **Q.** Where random, anonymous authors will  
 10 publish articles on various subjects; yes?  
 11 **A. Correct.**  
 12 **Q.** You also then looked up what you  
 13 described to the jury as being a material safety  
 14 data sheet, an MSDS? Yes?  
 15 **A. Yes.**  
 16 **Q.** And you had to do that for all the  
 17 chemicals that were found in Dawn Sy's analysis?  
 18 **A. Yes.**  
 19 **Q.** So before you looked up these things on  
 20 Wikipedia, for example, you had no independent  
 21 knowledge of what these compounds did to the human  
 22 body; yes?  
 23 **A. No. I had no independent knowledge.**  
 24 **Q.** You had no expertise about what these  
 25 chemicals did to the human body?

1 **A. These specific chemicals, no.**  
 2 **Q.** Okay. So what you provided the jury, the  
 3 testimony you provided the jury, came from you  
 4 reading from this stack of documents that came from  
 5 Wikipedia, for example?  
 6 **A. Yes. That's where all my information**  
 7 **comes is from reading.**  
 8 **Q.** I understand. The MSDS sheets that you  
 9 were talking to the jurors -- you've explained what  
 10 Wikipedia is. Now, MSDS, material safety data  
 11 sheet, is not something that's published by, for  
 12 example, the EPA, the Environmental Protection  
 13 Agency?  
 14 **A. I don't know if they publish it or not.**  
 15 **Q.** You've heard of the EPA?  
 16 **A. Yes, I have.**  
 17 **Q.** And they are the federal agency that  
 18 regulates, for example, pesticide; yes?  
 19 **A. Correct.**  
 20 **Q.** And they classify pesticides into classes  
 21 based on toxicity; yes?  
 22 **A. I'm sure they do. I don't know. It's**  
 23 **not my area of expertise.**  
 24 **Q.** What is not your area of expertise?  
 25 **A. What the EPA does.**

1 **Q.** Would you consider what's contained in  
 2 Dawn Sy's report your area of expertise?  
 3 **A. You mean the chemicals?**  
 4 **Q.** Yes.  
 5 **A. No.**  
 6 **Q.** Okay. So that's beyond your area of  
 7 expertise as a medical doctor; yes?  
 8 **A. Can I expand upon that?**  
 9 **Q.** Sure.  
 10 **A. Well, this is a common -- there are**  
 11 **thousands, thousands, and thousands of chemicals,**  
 12 **toxins, natural supplements, herbal remedies, that**  
 13 **are out there. A lot of them are not classified.**  
 14 **They're not studied, not FDA approved.**  
 15 **We run into this on a almost daily basis**  
 16 **of people on different medications. And so you**  
 17 **spend a lot of time working with pharmacists,**  
 18 **looking on the internet, to find out what these**  
 19 **things are so as to provide the best possible care**  
 20 **to your patients.**  
 21 **Q.** You mentioned pharmacist. Did you call a  
 22 pharmacist in this case?  
 23 **A. I did not.**  
 24 **Q.** Did you call Dawn Sy?  
 25 **A. I did not.**

1 **Q.** So the person that wrote this report that  
2 you're being asked questions about, you did not  
3 even talk to her?

4 **A.** No.

5 **Q.** So the medical -- the material safety  
6 data sheet -- those are sheets issued by the  
7 manufacturers of the compound; is that right? Or  
8 do you know that?

9 **A.** Well, the reference for this one is the  
10 **Merck Index. And another one -- it just depends on**  
11 **who -- where they get the information from.**

12 **Q.** All right. Why don't we just take a look  
13 at a few. You have one on alpha-terpineol; yes?

14 **A.** Yes.

15 **Q.** And alpha-terpineol, based upon this  
16 sheet, is made by ScienceLab in Houston, Texas?

17 **A.** I guess this one is.

18 **Q.** And ScienceLab is the one that issued  
19 this MSDS sheet; yes?

20 **A.** Well, the thing about MSDS is multiple  
21 **drug companies normally put these out. So it's**  
22 **whoever the drug company -- like ScienceLab, they**  
23 **have a lot of laboratory chemicals and equipment.**  
24 **So I'm not sure if they actually put it out or they**  
25 **are just using it as a reference. You can find**

1 **these at any -- if you have a chemical that's**  
2 **stored at a hospital, the MSDS are listed. I don't**  
3 **know who makes them.**

4 **Q.** So you're providing the jurors with --  
5 essentially, what I saw you doing was you were  
6 reading off the sheet, but you're not sure who  
7 compiled the information?

8 **A.** This is the standard of care for chemical  
9 **exposures is the MSDS.**

10 **Q.** I completely understand that. And you  
11 consult this when you're trying to manage care for  
12 patients?

13 **A.** Sometimes. Yes.

14 **Q.** You understand this jury is here to  
15 decide whether or not criminal charges against  
16 Mr. Ray has been proven beyond a reasonable doubt?

17 **A.** Yes.

18 **Q.** All right. So my question to you,  
19 Dr. Dickson, is based upon these various MSDS,  
20 doesn't it appear to you that this information is  
21 put out by the various manufacturers?

22 **A.** Does it appear to me? I would assume so.  
23 **But I don't know if they do the lethal -- the LD50,**  
24 **which is the -- normally those are done in research**  
25 **environments. And I don't know if they were done**

1 **originally by the manufacturer.**

2 **A lot of chemicals are made in a research**  
3 **university environment, and then manufacturers take**  
4 **them. So a lot of research might have been done at**  
5 **a university setting. I don't know where it was**  
6 **all done.**

7 **Q.** Sure. Fair to say that you're relying on  
8 hearsay information for which you don't know the  
9 source?

10 **A.** I would say no.

11 **Q.** Okay. Let's take an example.  
12 Terpineol-4-ol. You talked about that compound.  
13 In the MSDS sheet, it's Acros Organics. You would  
14 agree with me that that is the company that  
15 produces that compound; correct?

16 **A.** It could be one of the companies that do.

17 **Q.** Well, I don't want you to guess. Do you  
18 know or not?

19 **A.** Do I know if this is the only company  
20 that makes this chemical? I don't know.

21 **Q.** Do you know based upon the information  
22 you gave me whether or not Acros has terpineol-4-ol  
23 in its products?

24 **A.** Yes.

25 **Q.** And 2-EH, which is the acronym for which

1 compound?

2 **A.** Don't know. I would have to look it up.

3 **Q.** 2-ethyl-1-hexanol; correct?

4 **A.** I have to look it up. You're asking  
5 about 2-ethyl-1-hexanol?

6 **Q.** Yes.

7 **A.** What was your question?

8 **Q.** In order to understand what that chemical  
9 was, you looked at, for example, Wikipedia; is that  
10 right?

11 **A.** Well, I looked at two things. One, I  
12 looked at the chemical structure and something that  
13 is a standard of care, whether it's the MSDS. But  
14 sometimes the MSDS doesn't tell you where you find  
15 those things. Like, one of them is found in tea  
16 tree oil. So you wanted to know where these things  
17 come from. I'm not a chemist. I don't know the  
18 chemical structure of all these possible chemicals.  
19 But I like to know where they're from. Sometimes  
20 you can find that information on other internet  
21 sites.

22 **Q.** What I guess I'm trying to have you  
23 explain to the jury, if it's true or not true, is  
24 that these data sheets that you have testified,  
25 essentially, reading from, are put out not by

1 medical doctors; correct?

2 **A. I assume that they're done by PhD's and**  
3 **chemists.**

4 **Q.** I'd like you to not assume. Do you know?

5 **A. Do I know if they're done by medical**  
6 **doctors?**

7 **Q.** Yes.

8 **A. No. I do not know if they're done by**  
9 **medical doctors.**

10 **Q.** And these data sheets that you've read  
11 from do not -- they're not contained in medical  
12 books that are in the hospital library, for  
13 example?

14 **A. I'm sure they have the MSDSs in a**  
15 **hospital library.**

16 **Q.** In a book?

17 **A. Could be. They have an MSDS for all**  
18 **chemicals. And if they're present in the hospital,**  
19 **then they're going to be there. It's just easier**  
20 **to look them up on the internet than it is to**  
21 **search through a whole medical library.**

22 **Q.** I understand. Again, I don't want you to  
23 assume. Do you know whether or not the data sheets  
24 are compiled in a medical book?

25 **A. In our hospital, I do not know.**

1 **Q.** All right. And, in fact, some of the MDS  
2 sheets that you gave me yesterday, for example, the  
3 MDS sheets on the Just One Bite, the d-CON, those  
4 were not things that you looked up; right?

5 **A. Correct. They were given to me.**

6 **Q.** By the state?

7 **A. Uh-huh.**

8 **Q.** Do you know whether or not those came  
9 from Amayra and Michael Hamilton?

10 **A. I don't know. They're MSDS sheets. They**  
11 **can come from anywhere.**

12 **Q.** Now, let's take a look, then, at the  
13 analysis that you were asked questions about.  
14 First of all, do you know what all the evidence  
15 items were that were tested by Ms. Sy, without  
16 looking at the report?

17 **A. No.**

18 **Q.** So obviously this is not something you  
19 have personal, firsthand knowledge of?

20 **A. No.**

21 **Q.** Let's take a look at the second page,  
22 Doctor. Mr. Hughes asked you questions about  
23 Ms. Sy's finding of trace amounts of  
24 2-ethyl-1-hexanol and 2-ethylhexyl acetate that  
25 were detected in item 356; correct?

1 **A. Yes.**

2 **Q.** And you had told the jurors that based  
3 upon you looking up the information of Wikipedia  
4 and MSDS, that 2-EH, or 2-ethyl-1-hexanol, in your  
5 opinion from reading the material, is not toxic.  
6 Did I get that right?

7 **A. Can I just -- I can read to you what it**  
8 **says.**

9 **Q.** I'd rather you not. Just see if you can.  
10 And if you can't, then I'll let you refer.

11 **A. Well, the research said that they exposed**  
12 **rats six hours a day for 90 days to a certain parts**  
13 **per million, and they had no ill effects on the**  
14 **rats.**

15 **Q.** Okay. And from that you are assuming and  
16 extrapolating that there may or may not be a cause  
17 on humans; yes?

18 **A. Well, there is some other stuff about**  
19 **humans.**

20 **Q.** On the 2-ethyl-1-hexanol?

21 **A. Yes.**

22 **Q.** What does it say there?

23 **A. It says 2-ethyl-1-hexanol is one of the**  
24 **30 predominant VOCs identified by the Occupational**  
25 **Health Safety Administration. At least one area --**

1 **a microwave popcorn plant which had eight former**  
2 **workers diagnosed with bronchiolitis obliterans,**  
3 **but they don't know if it caused prolonged disease.**

4 **Q.** Can you tell the jury what a VOC is?

5 **A. No.**

6 **Q.** Is that a volatile organic compound?

7 **A. It could be.**

8 **Q.** Do you know what it does to the human  
9 body?

10 **A. No. Not off the top of my head.**

11 **Q.** We talked about the EPA, the United  
12 States Environmental Protection Agency. Did you  
13 consult with the EPA publications regarding other  
14 possible uses of 2-EH?

15 **A. If it's not in here, I did not.**

16 **Q.** All right. You would agree with me that  
17 the EPA is a good source since they regulate the  
18 environmental issues for the country; correct?

19 **A. In my neck of the woods, we look at the**  
20 **MSDS. That's the standard of care. So it might**  
21 **be. I'm just not familiar with the EPA.**

22 **Q.** Let me ask you to take a look at -- I  
23 know Detective Diskin had testified that he looked  
24 at some EPA information regarding 2-EH. Confirm  
25 with me that's the United States EPA seal.

1 **A. Yes.**

2 **Q.** And here can you read that paragraph for  
3 me to yourself and then I'll ask you questions.

4 Let me show this to Mr. Hughes.

5 Prior to me showing you this publication  
6 by the EPA, Dr. Dickson, did you know whether or  
7 not 2-ethyl-1-hexanol was used as an inert  
8 ingredient in pesticide?

9 **A. No.**

10 **Q.** Did you know whether or not  
11 2-ethyl-1-hexanol is used as a solvent in  
12 pesticide?

13 **A. No.**

14 **Q.** That wasn't contained in your MSDS sheet,  
15 was it?

16 **A. Let me read it.**

17 **No.**

18 **Q.** And based upon your review of this EPA  
19 publication, you would agree with me that it is  
20 listed by the EPA as an inert ingredient for  
21 pesticide?

22 **A. An inert?**

23 **Q.** Yes. An inert ingredient.

24 **A. Yes.**

25 MR. HUGHES: Your Honor, I'd ask that the EPA

1 publication that Ms. Do is asking the witness about  
2 be marked for purposes of the record.

3 MS. DO: That would be fine, and we would  
4 agree.

5 THE COURT: And the number will be 1014.

6 MS. DO: Thank you, Your Honor.

7 **Q.** Based upon you reviewing this EPA  
8 publication, you now see that 2-EH,  
9 2-ethyl-1-hexanol, is used as an inert ingredient  
10 in pesticide?

11 **A. That's what it says.**

12 **Q.** And an inert --

13 MR. HUGHES: Your Honor, objection. Pursuant  
14 to Rule 106, I'd ask the remainder of that  
15 paragraph be read.

16 MS. DO: Sure. We can even publish it if  
17 Mr. Hughes wants.

18 MR. HUGHES: I have no objection to it being  
19 marked and admitted as an exhibit.

20 THE COURT: Do you want to offer it?

21 MS. DO: That's fine, Your Honor.

22 THE COURT: Okay. Then 1014 will be admitted.

23 MS. DO: Thank you.

24 (Exhibit 1014 admitted.)

25 **Q.** BY MS. DO: Now that it's been admitted,

1 let me show it to the jury and you, Dr. Dickson.

2 I showed you the paragraph that is  
3 highlighted and on the screen; correct?

4 **A. Yes.**

5 **Q.** And this paragraph states, in terms of  
6 pesticide use, 2-EH is used only as an inert  
7 ingredient. There are currently no registered  
8 pesticide parts containing 2-EH as an active  
9 ingredient. 2-EH is used as a solvent, cosolvent,  
10 adjuvant of surfactants, or defoamer in pesticide  
11 products used on agricultural food, crops, animals,  
12 ornamental plants, and in residential use,  
13 pesticides such as insect sprays. Correct?

14 **A. Yes.**

15 **Q.** Okay. Now, can you, if you know, explain  
16 to the jury what an inert versus an active  
17 ingredient is.

18 **A. Active is -- meaning it's being used.**  
19 **It's active ingredient versus inert, that is not**  
20 **part of the active process, the chemical process.**

21 **Q.** Okay. So the active ingredient is the  
22 ingredient that causes whatever chemical reaction  
23 the product is intended for; yes?

24 **A. Yes.**

25 **Q.** The inactive ingredient is used to help

1 the active ingredient in that chemical process?

2 **A. It can help or it can just be a buffer, a**  
3 **filler.**

4 **Q.** Sure. And based upon the EPA  
5 publication, 2-EH is used as a solvent?

6 **A. Okay.**

7 **Q.** Do you know what an adjuvant or  
8 surfactant is?

9 **A. Well, it's an adjuvant of surfactants.**

10 **Q.** I'm sorry. Thank you.

11 **A. So that's something that helps**  
12 **surfactants.**

13 **Q.** What does that mean?

14 **A. Surfactants are things that whisk away**  
15 **moisture, keep things open.**

16 **Q.** Do you know based upon this whether or  
17 not 2-EH is used as it says, for example, a  
18 defoamer to make spraying pesticides easier?

19 **A. I don't know.**

20 **Q.** To make spraying the active ingredient  
21 that is used to kill the pests easier to spray? Do  
22 you know that?

23 **A. I don't.**

24 **Q.** Okay. So, now, I understand that you  
25 based, upon the MSDS, testified reading from

1 that -- but 2-EH, the inert ingredient, is not  
2 toxic to any degree of concern for humans. Yes?

3 **A. That's what it says.**

4 **Q.** But if 2-EH is used as an inert  
5 ingredient, for example, to help make pesticide  
6 easier to spray, you might consider that to be a  
7 marker of pesticide?

8 **A. Would I consider it to be a marker of  
9 pesticide? I can't answer that question.**

10 **Q.** Let me try and explain it a little  
11 better. If we know one of the uses of  
12 2-ethyl-1-hexanol is as an inactive ingredient to  
13 make pesticide, for example, easier to spray --

14 **A. Okay.**

15 **Q.** You with me?

16 **A. I'm with you.**

17 **Q.** If we find 2-ethyl-1-hexanol on evidence  
18 items, that might be -- and I'm not saying you  
19 know -- that might be a marker for pesticide being  
20 present?

21 **A. Can't say yes or no. Can I expand upon  
22 that?**

23 **Q.** If you need to.

24 **A. Well, it's found in many things. So it  
25 could be a marker of lots of things. One of the**

1 **things it was found in -- what was it?**

2 **Q.** Plasticizers?

3 **A. Plasticizers. Thank you. Yes.**

4 **Q.** Okay. So it can be a marker of many  
5 things, including what the EPA says is an inert  
6 ingredient in pesticide; yes?

7 **A. If that's what it says, yes.**

8 **Q.** Do you have any reason to dispute with  
9 the EPA?

10 **A. I have no reason to dispute the EPA.**

11 **Q.** And, again, I'm not suggesting, Doctor --  
12 because you've already told the jury the  
13 limitations of your expertise that you know. But  
14 since Mr. Hughes asked you about this report, you  
15 would agree with me, using common sense and what  
16 the EPA has published, that if it is an inert  
17 ingredient in pesticide, it might be, not saying it  
18 is. It might be a marker for pesticide; yes?

19 **A. What does "might" mean? Like, one in a  
20 million? One in a billion? One in a trillion?**

21 **Q.** Just might, possible.

22 **A. Again, what does "possible" mean.**

23 **Q.** I mean, I've heard you use that word  
24 under direct examination a number of times.

25 **A. Right.**

1 **Q.** So just using common sense, no fancy  
2 medical terms --

3 **A. Okay.**

4 **Q.** -- it's possible?

5 **A. Yes. One in a billion possibility,  
6 absolutely. One in a million, I can't give you  
7 that number. But yes. It's possible.**

8 **Q.** Okay. And I'm not asking you to assign a  
9 number. So let's put aside your guesses of one in  
10 a billion or one in a million. It's just a  
11 possibility?

12 **A. Okay.**

13 **Q.** And you would agree with me that rather  
14 than asking an emergency room doctor, perhaps a  
15 criminalist like Dawn Sy or a medical toxicologist  
16 would know more about this subject; yes?

17 **A. Yes.**

18 **Q.** We talked a little bit about the  
19 environment where these deaths and illnesses  
20 occurred. And you would agree with me it was a hot  
21 environment?

22 **A. It would appear to be.**

23 **Q.** And based upon water being poured on the  
24 rocks, it was a humid environment?

25 **A. Correct.**

1 **Q.** And, again, I know you told the jury the  
2 limitation of your expertise in this area. But do  
3 you know whether or not a heated, humid environment  
4 is also a good environment for speeding up the  
5 absorption rate of toxins if they are present?

6 **A. I don't know the answer to that.**

7 **Q.** Do you know whether or not it's much  
8 easier and faster for the human body to absorb  
9 toxins if they're present through hot, sweaty skin?

10 **A. It would make sense that it would be  
11 easier.**

12 **Q.** Okay. Lastly, on this question regarding  
13 the criminalist's report, Dr. Dickson, Ms. Sy,  
14 according to her analysis, found volatiles on all  
15 of these various evidence items from 305 to 564.  
16 Do you see that?

17 **A. I do.**

18 **Q.** You don't know what those items are?

19 **A. No, I don't.**

20 **Q.** Do you know what a volatile is?

21 **A. Something that's volatile can be  
22 explosive.**

23 **Q.** That's your definition of the volatile?

24 **A. I'm sure there is another one. But it  
25 can be.**



1 Q. When you talked to Mr. Hughes about there  
2 being trace amounts and comparing it to the LD50  
3 that you read from your printouts there, do you  
4 have any idea what percentage of the evidence taken  
5 from the scene was tested that resulted in  
6 2-ethyl-1-hexanol?

7 A. No.

8 Q. All right. So you have no idea, for  
9 example, if 2-ethyl-1-hexanol was found in one of  
10 these paint cans that contains -- that contains the  
11 materials of the tarps that cover the sweat lodge;  
12 correct?

13 A. Say that again.

14 Q. You have no idea if 356, for example,  
15 came from one of the cross-sections or the cutouts  
16 of the sweat lodge covering?

17 A. No.

18 Q. And you have no idea, for example, if  
19 that was a section that was 10 inch by 10 inch?

20 A. I have no idea what size it is.

21 Q. You have no idea if that was less than 1  
22 percent of the evidence taken?

23 A. Correct.

24 Q. Since obviously only less than 1 percent  
25 was tested, you have no way of knowing how much of

1 2-ethyl-1-hexanol could have been present at the  
2 scene because not everything was tested; right?

3 A. Well, you can do some math. If 1 percent  
4 is trace, and you're doing 100 percent, you  
5 multiply it times a hundred. So then that would  
6 give you how much. If you're saying that it's  
7 equally spread, in theory, across the whole area,  
8 if you're saying it's 1 percent.

9 Q. So you think that it's as easy as taking  
10 1 percent and multiplying it by a hundred to tell  
11 the jury how much of 2-ethyl-1-hexanol was at the  
12 scene?

13 A. If you're saying that it's the same  
14 amount throughout the whole thing --

15 Q. I don't know.

16 A. Okay. I thought that's what you were  
17 saying.

18 Q. I don't know. And obviously what I'm  
19 asking you is that because you had made a comment  
20 about trace amounts?

21 A. Correct.

22 Q. Meaning, I think you said, not very much?

23 A. Correct.

24 Q. But you don't know, and you can't tell  
25 this jury, what else was present in the evidence

1 items that was not tested?

2 A. No. Cannot say that.

3 Q. Right. So if the jury heard testimony  
4 that 356 was less than 1 percent of the tarps and  
5 materials that were ultimately discarded and can no  
6 longer be tested, you have no idea how much  
7 2-ethyl-1-hexanol was present; correct?

8 A. Correct.

9 Q. Let me now move, Dr. Dickson, to your  
10 testimony regarding heat illnesses and heat stroke.

11 A. Yes.

12 Q. I understand that as the director, the  
13 EMS director, for Yuma County, you do a lot of  
14 teaching to first responders?

15 A. I do.

16 Q. That must be a very rewarding job?

17 A. It's my most rewarding job, actually.

18 Q. Okay. And you talk to paramedics, for  
19 example, and firefighters in recognizing signs and  
20 symptoms in themselves and folks that they respond  
21 to?

22 A. And patients.

23 Q. And patients. And so obviously these  
24 folks are not medical doctors like you?

25 A. Correct.

1 Q. And so you're helping teach someone who  
2 is perhaps a bit above a layperson's knowledge how  
3 to look at the objective signs and symptoms a  
4 person shows and come to a conclusion about what  
5 might be going on with that person?

6 A. Correct.

7 Q. And you can do that; right?

8 A. I can do what?

9 Q. I'm sorry. That was a bad question. You  
10 can look at the objective signs and symptoms and  
11 come to at least a reasonable preliminary  
12 conclusion about what might be going on physically,  
13 medically with the person?

14 A. Yes.

15 Q. And you teach these things to first  
16 responders because they're the first ones  
17 dispatched to ground zero when there is an  
18 accident?

19 A. Correct.

20 Q. Or mass-casualty incident?

21 A. Correct.

22 Q. It's really important that those folks  
23 who go to ground zero recognize signs and symptoms  
24 of what's going on with the people they're trying  
25 to help?

1 **A. Correct.**  
 2 **Q.** And many times trying to save?  
 3 **A. Correct.**  
 4 **Q.** And so you would agree with me that first  
 5 responders, their eyes and ears are very important?  
 6 **A. Absolutely.**  
 7 **Q.** And what they see and what they think or  
 8 what they suspect when they go to the scene is very  
 9 important to, for example, an emergency room  
 10 doctor?  
 11 **A. Yes. We frequently rely on their**  
 12 **talents.**  
 13 **Q.** Did you know that in this case, on  
 14 October 8, 2009, paramedics and EMS personnel from  
 15 many different agencies, Verde Valley Fire  
 16 Department, Sedona Fire Department, Cottonwood, I  
 17 believe, also responded to the scene?  
 18 **A. I saw multiple agencies were involved.**  
 19 **Yes.**  
 20 **Q.** And even a HazMat team from the Verde  
 21 Valley Fire Department came out?  
 22 **A. Okay.**  
 23 **Q.** And those are the people that we mean  
 24 when we say "first responders"; right?  
 25 **A. Yes.**

1 **Q.** Did you know in this case that on  
 2 October 8, 2009, somebody that Detective Diskin has  
 3 testified he believes is a first responder looking  
 4 at signs and symptoms of folks, said he believed  
 5 carbon monoxide maybe mixed in with  
 6 organophosphates could be the cause of what he was  
 7 seeing on the ground?  
 8 **A. Okay.**  
 9 **Q.** Did you know that?  
 10 **A. No.**  
 11 **Q.** The state never told you that; correct?  
 12 **A. No.**  
 13 **Q.** The state never played a tape for you  
 14 where that statement was actually made?  
 15 **A. No.**  
 16 **Q.** Would that be important to you?  
 17 **A. Knowing what I know now after reviewing**  
 18 **the big picture -- we talked a little bit earlier**  
 19 **about people's first impressions aren't always**  
 20 **correct. So you need to listen, absolutely. But**  
 21 **you need to look at the big picture. And that's**  
 22 **why having that -- be able to look at the first**  
 23 **responders, the emergency physicians, the ICU, the**  
 24 **whole throughput, I don't think that that would**  
 25 **change my opinion.**

1 **Q.** Okay. But you haven't even heard the  
 2 statement; correct?  
 3 **A. Well, you just told me.**  
 4 **Q.** For your own ears you haven't heard the  
 5 actual statement?  
 6 **A. No. I haven't heard that statement.**  
 7 **Q.** You obviously have not -- I don't think  
 8 the state has identified who this person is. But  
 9 you obviously haven't spoken to that person --  
 10 **A. No.**  
 11 **Q.** -- to know what prompted him to say signs  
 12 and symptoms, organophosphates; right?  
 13 **A. I have not met this person and talked to**  
 14 **this person. No.**  
 15 **Q.** Just a moment ago you told the jury the  
 16 reason why you teach first responders to recognize  
 17 signs and symptoms -- I know it's primarily heat  
 18 illnesses. But you teach them to recognize signs  
 19 and symptoms because it's critical to them helping  
 20 and in some instances perhaps saving a life;  
 21 correct?  
 22 **A. May I expand upon that?**  
 23 **Q.** Well, I just want to get an answer first.  
 24 Did you just tell the jury that?  
 25 **A. Yes.**

1 **Q.** And so a moment ago you agreed with me  
 2 that it is important what the eyes and ears are of  
 3 the first responders at the scene; correct?  
 4 **A. Yes.**  
 5 **Q.** But now you're telling the jury that  
 6 having not heard the statement, not knowing who  
 7 said it, why the person said it, that it wouldn't  
 8 make a difference to you because the big picture  
 9 for you rules out organophosphates; correct?  
 10 **A. Correct.**  
 11 **Q.** And you believe that your opinion of  
 12 ruling out organophosphates is consistent with  
 13 Dr. Brent Cutshall?  
 14 **A. Yes.**  
 15 **Q.** And Dr. Lyon?  
 16 **A. Yes.**  
 17 **Q.** And Dr. Mosley?  
 18 **A. Yes.**  
 19 **Q.** You talked to the jury quite a bit about  
 20 heat illnesses and heat stroke. And Dr. Mosley  
 21 explained a term to the jury when he was here last  
 22 week. It was a term called "pathophysiology."  
 23 You've heard that; correct?  
 24 **A. Yes.**  
 25 **Q.** And as Dr. Mosley explained to the

1 jurors, that is understanding the processes that go  
2 on in the body, the biological, physical processes  
3 that then result in the signs and symptoms that you  
4 teach to first responders.

5 **A. Yes.**

6 **Q.** All right. When you and I spoke on  
7 January 25, 2011, you told me then that you didn't  
8 understand the pathophysiology of heat illnesses as  
9 much as you do in recognizing the signs and  
10 symptoms; correct?

11 **A. The pathophysiology is -- of heat illness**  
12 **and what we talked about earlier is the theories of**  
13 **how it affects -- for example, we talked the -- we**  
14 **talked about the arteries and veins -- are**  
15 **theories. There are -- a lot of people have ideas**  
16 **of what -- why the -- each lining of the aorta. We**  
17 **talked about the hoses, the lining of your arteries**  
18 **melts, and then your body tries to plug those**  
19 **holes. And that's why you end up with different**  
20 **clotting problems -- are all theories.**

21 **I guess to say that I know them would**  
22 **be -- nobody knows them completely down to the**  
23 **molecular level of what's happening.**

24 **Q.** Okay. The question I asked you on  
25 January 25, 2011 -- I asked you a number of

1 questions. For example, what happens to the body  
2 when it gets hot; right?

3 **A. Uh-huh.**

4 **Q.** Do you remember that question?

5 **A. Not off the top of my head specifically.**

6 **Q.** The conversation was recorded; yes?

7 **A. Yes.**

8 **Q.** Has the state provided you with a  
9 transcript to review?

10 **A. They did.**

11 **Q.** Did you review it?

12 **A. I did not.**

13 **Q.** Do you have any reasons -- and you can  
14 look at the transcript if you want. Any reason to  
15 dispute that I asked you that question, what  
16 happened?

17 **A. No. I have no reason to dispute that you**  
18 **asked that question.**

19 **Q.** And the question was, what happens to the  
20 body when it gets hot; right?

21 **A. Yes.**

22 **Q.** And after attempting to answer that  
23 question, I then asked you the following question,  
24 which was, would you say that just based upon some  
25 of our questions earlier, that you're much better

1 versed in explaining the symptoms and signs, the  
2 red flags, so to speak, versus the pathophysiology?  
3 Do you remember that question being  
4 asked?

5 **A. I don't.**

6 **Q.** Do you remember your answer to that  
7 question being, yes? Absolutely?

8 **A. I take your word for it.**

9 **Q.** On January 25, 2011, when I interviewed  
10 you and asked you a lot of the questions we heard  
11 today -- what happens to the body when it gets hot?  
12 What does the body do to cool down? -- you agreed  
13 with me that you understood the signs and symptoms  
14 better than the actual processes, the  
15 pathophysiology; correct?

16 **A. What we discussed on that meeting day,**  
17 **the mechanisms of cooling, the conductive, the**  
18 **radiant, the evaporative, the convective heat loss**  
19 **methods, the pathophys; and then you can end up**  
20 **with altered mental status, that you can end up**  
21 **with pulmonary edema, that you can end up going**  
22 **into DIC where you bleed.**

23 **So I don't know if that's what you're**  
24 **asking.**

25 **Q.** Well, I'll give you the transcript.

1 **A. Okay.**

2 **Q.** Let me ask you this, Dr. Dickson: Have  
3 you, since we interviewed you on January 25, 2011,  
4 refreshed -- you know -- looked at materials,  
5 refreshed your knowledge, regarding the  
6 pathophysiology of heat stroke or heat illnesses?

7 **A. I gave my heat illness lecture a month**  
8 **ago. It's getting warm in Yuma, so I do that every**  
9 **spring.**

10 **Q.** Understood. I don't want you to take my  
11 word for it. I want to make sure that these were  
12 your words. I'm going to hand you the transcript  
13 that's been marked as 1009.

14 If you look at page 29, starting line 26  
15 to 30, line 1. I did ask you on that date, would  
16 you say that just based on some of our questions  
17 earlier that you're much better versed in  
18 explaining the symptoms and signs, the red flags,  
19 so to speak, versus the pathophysiology?

20 And your answer was?

21 **A. I said, yes. Absolutely.**

22 **Q.** And you understood then what  
23 "pathophysiology" meant; right?

24 **A. Yes.**

25 **Q.** And then we talked about some of the

1 other things. For example, I asked you, what  
2 causes the brain to not get enough blood when the  
3 body is heated? Do you remember that?

4 **A. Not to get enough blood or not to get**  
5 **enough oxygen?**

6 **Q.** Let me go to -- do you remember saying if  
7 you're unconscious or acting unusual, your brain  
8 isn't getting enough blood and it's not working  
9 well?

10 Do you remember saying that?

11 **A. I don't. But I imagine I probably would**  
12 **have said not getting enough oxygen.**

13 **Q.** That was your next line. Let me make  
14 sure that you -- I don't want you to agree with me  
15 if that's not what you said.

16 **A. Okay.**

17 **Q.** I'm going to have you look at page 58,  
18 starting at line 12. And we're going to go down to  
19 line 17. Okay?

20 **A. Okay.**

21 **Q.** You were explaining to me -- and one of  
22 the questions I was asking you is, okay. So what  
23 happens to the body when it's hot?

24 You were explaining to me what might  
25 happen to the brain.

1 **A. Yes.**

2 **Q.** And you said, but if you're unconscious  
3 or acting unusual, your brain isn't getting enough  
4 blood, and it's not working well. It's an end  
5 organ to that.

6 And picking up on your comment, I asked  
7 you, do you know why the brain is not getting  
8 enough blood?

9 And your answer was -- at line --

10 **A. I'm not sure where you're at. Sorry.**

11 **Q.** No problem. Your line at 16 is?

12 **A. Or not enough oxygen.**

13 **Q.** Please continue.

14 **A. So it says, do you know why the brain is**  
15 **not getting enough oxygen or not enough oxygen?**

16 **I don't know why. Probably because of**  
17 **the systemic effects of heat.**

18 **And you said, what does that mean?**

19 **And then it goes on, we talk about**  
20 **causes -- cerebral edema, pulmonary edema. And you**  
21 **can get hypoxic from that. So when your lungs are**  
22 **full of fluid, you don't get enough oxygen. You**  
23 **don't exchange carbon dioxide.**

24 **Q.** Okay. Let me make sure that  
25 question/answer is clear to the jury.

1 You said, but if you're unconscious or  
2 acting unusual, your brain is not getting enough  
3 blood, and it's not working well. It's an end  
4 organ. So that's --

5 I asked, do you know why the brain is not  
6 getting enough blood?

7 You answered, or not enough oxygen. I  
8 don't know why. Because probably due to the  
9 systemic effects of heat.

10 And then I asked you, what does that  
11 mean?

12 And you said, it can cause cerebral  
13 edema.

14 Correct? Is that right?

15 **A. Yes. That's correct.**

16 **Q.** And then later on in the interview, I  
17 asked you, what causes cerebral edema?

18 Do you remember that?

19 **A. I don't remember that.**

20 **Q.** Let me show you the page/line. Why don't  
21 we on page 59 start at line 14 to 19. Okay? I'm  
22 sorry. 21.

23 I asked you, I understand what you're  
24 explaining. You're sort of explaining to me what  
25 the signs and symptoms are. I'm trying to

1 understand the pathophysiology here. When -- I  
2 mean, you said earlier, you don't know why or what  
3 causes the brain not to get enough blood or oxygen.

4 You said?

5 **A. Says, I don't know. It can be caused by**  
6 **cerebral edema. It can be caused from heat, the**  
7 **excessive heat.**

8 **Q.** And then I asked, what causes cerebral  
9 edema?

10 And you said?

11 **A. Don't know the pathophys on the top of my**  
12 **head -- off the top of my head.**

13 **Q.** I don't know the pathophysiology off the  
14 top of my head. Correct?

15 **A. Correct.**

16 **Q.** Today on direct I heard you provide some  
17 explanation of cerebral edema. And I'm asking you,  
18 have you since our interview on January 25, 2011,  
19 done any kind of study or additional research?

20 **A. Just reading those articles again and**  
21 **doing my lecture.**

22 **Q.** Okay. I appreciate that. And this is a  
23 lecture you give on signs and symptoms; right?

24 **A. Signs and symptoms and pathophys of heat**  
25 **exchange and heat illness.**

1 Q. What you told me on January 25th is that  
2 you don't understand the pathophys as much as you  
3 do the signs and symptoms?

4 A. Well, I don't know if I would say that.  
5 I'd say that I discussed the pathophys.  
6 Pathophysiology can go from the macroscopic level,  
7 so what's happening to the brain, what's happening  
8 to the kidney, all the way down to the cells in the  
9 microscope. I am not an expert at the cellular and  
10 chemical level of things.

11 So that's what I guess I'm trying to get  
12 to.

13 Q. I understand that. I just want to make  
14 sure that I -- on January 25th I asked you if you  
15 were better in understanding signs and symptoms  
16 than you were the pathophysiology.

17 And your answer was, yes. Absolutely.

18 A. That's what I said. That's what I said.  
19 Yes.

20 Q. In the 11 years that you have treated  
21 patients, you treated patients for heat illnesses?

22 A. Yes.

23 Q. And you told Mr. Hughes that you've seen  
24 a lot of that because of the Yuma weather?

25 A. Correct.

1 Q. And so you know this pretty well?

2 A. Correct.

3 Q. You could write a book if you wanted?

4 A. I don't know about a book.

5 Q. Okay.

6 A. An article maybe.

7 Q. You would agree with me that the jury  
8 would be entitled to your knowledge and your  
9 expertise; yes?

10 A. Yes.

11 Q. And in this case you wrote reports on  
12 each of the decedents; is that right?

13 A. Yes.

14 Q. And as you explained to this jury  
15 earlier, you wrote those reports on January 10,  
16 2011, and then you revised them after receiving  
17 Dr. Paul's report; right?

18 A. Yes.

19 MR. HUGHES: Your Honor, may we approach?

20 THE COURT: Yes, you may.

21 Ladies and gentlemen, feel free to stand  
22 and stretch.

23 Dr. Dickson, if you'd like to stand up,  
24 please.

25 (Sidebar conference.)

1 MR. HUGHES: Your Honor, I apologize. Sorry  
2 to do this. I know we're close to our break. I  
3 desperately need to use the bathroom.

4 THE COURT: Oh. That is an emergency.

5 MS. DO: Are you okay?

6 MR. HUGHES: I'm okay. But I just had too  
7 much soda for lunch.

8 THE COURT: Just a little planning. Let's  
9 break it up into two shorter recesses or something.  
10 Just be conscious of that so we can get the full  
11 day in.

12 MS. DO: Sure.

13 MR. HUGHES: Thank you, Your Honor.

14 (End of sidebar conference.)

15 THE COURT: Ladies and gentlemen, we need to  
16 take a brief recess right now, just relatively  
17 short. Be back in -- well, assemble at 10 till.  
18 We'll start as soon as we can.

19 Remember the admonitions.

20 Doctor, you're excused for a break, too.

21 Thank you.

22 (Recess.)

23 THE COURT: The record will show the presence  
24 of Mr. Ray, the attorneys, the jury. Dr. Dickson  
25 has returned to the witness stand.

1 Ms. Do.

2 MS. DO: Thank you, Your Honor.

3 Q. Hi again. Dr. Dickson, before we took  
4 that break, we were talking about your experience  
5 and knowledge about heat illnesses that you've  
6 amassed in your 11 years as a doctor?

7 A. Correct.

8 Q. And so you know the stuff pretty well;  
9 correct?

10 A. Correct.

11 Q. And you rendered your opinion and  
12 conclusion in this case based upon what you know  
13 based upon your firsthand knowledge; right?

14 A. Firsthand knowledge and literature and  
15 study.

16 Q. Okay. But a lot of it had to have come  
17 from your firsthand knowledge; correct?

18 A. I'd say the majority comes from studying  
19 the literature. And then I've got experience in  
20 it.

21 Q. Studying the literature when?

22 A. Medical school, residency, and  
23 afterwards. Started seeing heat illness more  
24 frequently and continued to research it, study it,  
25 talk about it.

1 Q. Okay. The conclusions you reached in  
 2 this case -- and we'll talk about it in more  
 3 detail -- you wrote in your report; right?  
 4 A. **What did I write in my report?**  
 5 Q. Your conclusions regarding cause of death  
 6 in this case was heat stroke?  
 7 A. **Yes.**  
 8 Q. And you wrote reports for the state to  
 9 explain to them what you knew about heat stroke and  
 10 heat illnesses; right?  
 11 A. **Correct.**  
 12 Q. Let me hand you what has been marked as  
 13 1011 through 1013. So 1011, 1012 and 1013. Would  
 14 you confirm for me that those exhibits marked for  
 15 identification are the three reports that you wrote  
 16 in this case?  
 17 A. **Yes.**  
 18 Q. And the top of the report indicate a date  
 19 of January 10, 2011, on each of these?  
 20 A. **Yes.**  
 21 Q. But if you take a look at the second  
 22 page, for example, of 1011, which is the report  
 23 regarding James Shore, do you see the extra  
 24 section -- well, do you see the section that  
 25 states, does report a temperature of less than,

1 et cetera?  
 2 A. **Yes.**  
 3 Q. Does that indicate to you that these are  
 4 your revised report?  
 5 A. **Yes.**  
 6 Q. The report that you revised after seeing  
 7 Dr. Paul's report?  
 8 A. **Yes.**  
 9 Q. And at the top of the report, at the top  
 10 of the left-hand corner, you wrote, Preliminary  
 11 Report, on each of these. Are these reports only  
 12 preliminary?  
 13 A. **I think they'd be my final ones.**  
 14 Q. You just didn't take that language off?  
 15 A. **Correct.**  
 16 Q. Now, your report indicates, for example,  
 17 the materials you reviewed?  
 18 A. **Yes.**  
 19 Q. And then there is a section called  
 20 "Summary of the Case"?  
 21 A. **Yes.**  
 22 Q. And that would contain, for example, the  
 23 facts and circumstances you learned from reading  
 24 the medical records and the witness statement?  
 25 A. **Yes.**

1 Q. And then below that you have conclusion  
 2 and opinion; correct?  
 3 A. **Yes.**  
 4 Q. You based your conclusion and opinion on  
 5 what you know about heat illnesses and applying  
 6 that knowledge to the facts of the case; right?  
 7 A. **That's one thing I used.**  
 8 Q. And another thing you used was consulting  
 9 the literature; right?  
 10 A. **Yes.**  
 11 Q. And when you say "consulting the  
 12 literature," you mean looking it up to help you  
 13 remember -- you know -- certain things that you may  
 14 not remember at this date?  
 15 A. **Correct.**  
 16 Q. One of the things that you looked up, as  
 17 you told me previously, was an article on  
 18 eMedicine; right?  
 19 A. **Correct.**  
 20 Q. And eMedicine is a website?  
 21 A. **Correct.**  
 22 Q. And it's a website that is similar to a  
 23 Wikipedia for medical knowledge -- right? -- where  
 24 you have various authors who write on various  
 25 issues that are then published at the website?

1 A. **It's not Wikipedia. It's written by**  
 2 **medical doctors.**  
 3 Q. Yes. I understand that. But --  
 4 A. **They're published articles.**  
 5 Q. So we can get a general concept of what  
 6 eMedicine is, it's a website on the internet --  
 7 A. **Correct.**  
 8 Q. -- where you have various authors who are  
 9 medical doctors or perhaps another profession write  
 10 articles, and they're pooled at that website?  
 11 A. **Yes.**  
 12 Q. And so that I have the right article,  
 13 just if you could review that for me and tell me if  
 14 that is the article that you consulted in order to  
 15 write your reports in this case?  
 16 A. **Yes. It looks like it.**  
 17 Q. It's an article written by Robert S.  
 18 Helman; correct?  
 19 A. **Yes.**  
 20 Q. It's dated October 26, 2010?  
 21 A. **Correct.**  
 22 Q. So let's go through your report. And I'm  
 23 going to use your report on Liz Neuman as an  
 24 example -- Exhibit 1013.  
 25 Do you have that in front of you?

1 **A. Yes.**  
 2 **Q.** It seems to be a little bit lengthier  
 3 than the ones you wrote on Mr. Shore (sic) and  
 4 Mr. Brown (sic), so I'm going to use this one.  
 5 All right?  
 6 **A. Sounds fine.**  
 7 **Q.** Now, under your conclusion and your  
 8 opinion, that heading, you're trying to tell the  
 9 state what your conclusion and opinions were of  
 10 Ms. Neuman's cause of death?  
 11 **A. Yes.**  
 12 **Q.** And you wrote, Lizbeth Newman, in my  
 13 opinion, died of heat stroke; correct?  
 14 **A. Yes.**  
 15 **Q.** On the second page of your report, you  
 16 wrote, numerous CNS (central nervous system)  
 17 symptoms ranging from minor irritability to  
 18 delusions, irrational behavior, hallucinations and  
 19 coma have been described in heat stroke. Correct?  
 20 **A. Yes.**  
 21 **Q.** Now I want you to take a look at the  
 22 eMedicine article that you consulted with.  
 23 Starting at page -- and I numbered them for you.  
 24 It's on page 5.  
 25 **A. Yes.**

1 **Q.** At the bottom of page 5, the eMedicine  
 2 article reads, numerous CNS symptoms ranging from  
 3 minor irritability to delusions, irrational  
 4 behavior, hallucinations and coma have been  
 5 described. Correct?  
 6 **A. Yes.**  
 7 **Q.** So it appears to me that you in your  
 8 report wrote exactly what I read in the eMedicine  
 9 article minus the parenthetical "central nervous  
 10 system." Correct?  
 11 **A. Yes.**  
 12 **Q.** Down to the punctuation, the commas?  
 13 **A. Uh-huh.**  
 14 **Q.** Is that right?  
 15 **A. Correct.**  
 16 **Q.** So your conclusion in Ms. Neuman's report  
 17 came verbatim from the eMedicine article; correct?  
 18 **A. I don't know if it's verbatim. But yes.**  
 19 **It's very, very -- yes. Essentially, yes.**  
 20 **Q.** Verbatim minus the parenthetical "central  
 21 nervous system"; right?  
 22 **A. Correct.**  
 23 **Q.** I asked you -- and so is it fair to say  
 24 that you, essentially, imported what you read in  
 25 the eMedicine article regarding CNS symptoms into

1 Ms. Neuman's report on the second page?  
 2 **A. Well, I get this information from**  
 3 **eMedicine. Some other things I provided for you**  
 4 **were the Emergency Medicine textbook, Tintinalli.**  
 5 **There were some other resources that I provided.**  
 6 **They all, basically, come from there. That's where**  
 7 **I develop my lectures from, and that's where I do**  
 8 **most of my reading from, the textbooks and these**  
 9 **readings.**  
 10 **Q.** I understand that.  
 11 **A. Okay.**  
 12 **Q.** But in your report that you provided to  
 13 the state, you wrote a paragraph regarding CNS  
 14 symptoms that, essentially, was taken from the  
 15 eMedicine article minus the "(central nervous  
 16 system)"; correct?  
 17 **A. Yes.**  
 18 **Q.** Now, when you wrote that in your report  
 19 and you handed it to the state on January 10, 2011,  
 20 or thereabouts, you understood what causes those  
 21 CNS symptoms; right?  
 22 **A. I'm sorry. I don't understand the**  
 23 **question.**  
 24 **Q.** When you wrote this report --  
 25 **A. Correct.**

1 **Q.** -- dated January 10, 2011, about your  
 2 professional opinion of Ms. Neuman's cause of  
 3 death, you understood what you wrote; right?  
 4 **A. Yes.**  
 5 **Q.** You understood what CNS symptoms were?  
 6 **A. Correct.**  
 7 **Q.** And CNS, so the jury understands, is  
 8 central nervous system?  
 9 **A. Yes.**  
 10 **Q.** When I interviewed you on January 25,  
 11 2011, Doctor, isn't it true that when I asked you  
 12 what caused CNS symptoms, you stated you weren't  
 13 sure?  
 14 **A. I don't know the microbiological chemical**  
 15 **reason of why the CNS symptoms occur, why one**  
 16 **person is just acting a little goofy versus**  
 17 **somebody that's unconscious. I couldn't tell you**  
 18 **why.**  
 19 **Q.** Do you remember me asking, what is the  
 20 associated mechanism with CNS symptoms?  
 21 **A. I don't remember that. But it seems**  
 22 **cerebral edema is probably my answer.**  
 23 **Q.** Do you have any reason to dispute that I  
 24 asked you that question?  
 25 **A. No. No reason.**

1 Q. Your answer was, mostly from cerebral  
2 edema, I assume. But I don't know it off the top  
3 of my head. I don't know the cellular level of  
4 this.

5 Correct?

6 A. Correct.

7 Q. So you took that paragraph from  
8 eMedicine, but you didn't have, fair to say, a  
9 complete or clear understanding of what causes  
10 these various CNS symptoms when I interviewed you  
11 on January 25th?

12 A. **I don't think anybody has the complete  
13 cellular level of what causes it.**

14 Q. Well, we're just going to concentrate on  
15 you.

16 A. Okay.

17 Q. You don't; correct?

18 A. Correct.

19 Q. Now, you gave me the answer of cerebral  
20 edema. And in your report you wrote -- same page,  
21 okay? -- cerebral edema and herniation also may  
22 occur during the course of heat stroke.

23 Correct?

24 A. Correct.

25 Q. Now, I want you to take a look at that

1 eMedicine article at page 6. Under the article  
2 heading of Central Nervous System, the last  
3 sentence reads exactly as it is in your report;  
4 correct?

5 Cerebral edema and herniation also may  
6 occur during the course of heat stroke?

7 A. Correct.

8 Q. So you took, again, exactly what's  
9 contained in this eMedicine article and imported it  
10 into your report?

11 A. Correct.

12 Q. But you didn't cite the article; correct?

13 A. **I did give you a citing of the article  
14 actually.**

15 Q. No. In your report?

16 A. **Yeah. There is one with all the  
17 references I gave you.**

18 Q. Dr. Dickson, in your report for Liz  
19 Neuman that you have in front of you, anywhere in  
20 here did you cite the article that you,  
21 essentially, were writing verbatim from?

22 A. **Not in this copy, but I have one with all  
23 of the citings on it.**

24 Q. You have the --

25 A. **I sent you one with all the references.**

1 Q. Okay. Let me make sure I understand.

2 You're saying you sent me a report?

3 A. **With references.**

4 Q. When did you send me that?

5 A. **You asked for references, and I gave you  
6 the references. I don't remember what the date  
7 was.**

8 Q. Right. Okay. I understand. You did  
9 give me references. And that's how I got this  
10 article.

11 A. Okay.

12 Q. But when you provided this to the state  
13 that then went to us, you did not cite your source;  
14 correct?

15 A. **Not at that time. No.**

16 Q. Now, when you wrote in your report  
17 exactly what's in the eMedicine article, cerebral  
18 edema and herniation also may occur during the  
19 course of heat stroke, did you understand -- did  
20 you understand at that time what the  
21 pathophysiology of cerebral edema was?

22 A. **Again, what are you asking? Are you  
23 asking on the cellular level? I don't think  
24 anybody knows on the cellular level what causes  
25 that specifically.**

1 Q. You qualified my question a number of  
2 times with cellular level. You understand, and  
3 Dr. Mosley explained to the jury, that  
4 pathophysiology is simply the biological, physical  
5 processes of how heat affects the body; correct?

6 A. Correct.

7 Q. We're not talking about cellular,  
8 molecular. We're just talking about the general  
9 processes -- right? -- like vasodilation; correct?

10 A. **Vasodilation?**

11 Q. Yes.

12 A. Yes.

13 Q. Okay. So when I asked you on  
14 January 25th, 2011, looking at your report, Doctor,  
15 what causes cerebral edema, do you remember what  
16 your answer was?

17 A. **Again, this depends on what you're  
18 looking for. If you're looking for the cellular  
19 level, I don't know. If you're looking for the  
20 macroscopic, theoretical level, I can definitely  
21 tell you that.**

22 Q. What I'm asking is, on January 25, 2011,  
23 15 days after you wrote this report, when I asked  
24 you what causes cerebral edema, what was your  
25 answer then?



1 **A. You just read it. I said, no. I don't**  
 2 **know.**  
 3 **Q.** I don't know the pathophysiology off the  
 4 top of my head; correct?  
 5 **A. Correct.**  
 6 **Q.** You would agree with me, again, that  
 7 sentence came verbatim from this eMedicine article?  
 8 **A. Correct.**  
 9 **Q.** Now, moving down to where you talked  
 10 about pulse, the pulse that you might find in heat  
 11 stroke or heat illness, you wrote, pulse, colon:  
 12 Tachycardia to rates exceeding 130 beats per minute  
 13 is common, period. Correct?  
 14 **A. Yes.**  
 15 **Q.** Now, I want you to take a look at the  
 16 eMedicine article, page 6, again.  
 17 And under vital signs, would you agree  
 18 with me that you wrote exactly down to the  
 19 punctuation what's in this eMedicine article?  
 20 **A. Absolutely.**  
 21 **Q.** Pulse, colon: Tachycardia to rates  
 22 exceeding 130 beats per minute is common. Correct?  
 23 **A. Yes.**  
 24 **Q.** So you kind of cut and pasted from this  
 25 eMedicine article?

1 **A. It's one of my primary sources of**  
 2 **reading. They're very extensive. They cover more**  
 3 **than your typical textbook. I did take some stuff**  
 4 **from the textbook. But this is more thorough, in**  
 5 **my opinion.**  
 6 **Q.** I understand.  
 7 Then you also under pulmonary -- and  
 8 these are all under your heading of your conclusion  
 9 and opinions; correct?  
 10 **A. Well, this was meant as, I guess, a sort**  
 11 **of tutorial of what the signs and symptoms of heat**  
 12 **stroke can be and how they fit into this case.**  
 13 **Q.** Understood.  
 14 All of these things that we're talking  
 15 about -- the cerebral edema, the CNS, pulse -- you  
 16 have it under conclusion and opinion; correct?  
 17 **A. They were under the heading of conclusion**  
 18 **and opinion.**  
 19 **Q.** Okay. Let's talk about pulmonary, what  
 20 you wrote about what you might find regarding  
 21 pulmonary. Pulmonary. That's related to the lung;  
 22 correct?  
 23 **A. Yes.**  
 24 **Q.** You wrote on, again, the same page of  
 25 Ms. Neuman's report, hypoxia and cyanosis may be

1 due to a number of processes, comma, including  
 2 atelectasis, comma, pulmonary infarction, comma,  
 3 aspiration pneumonia, comma, and pulmonary edema,  
 4 period. Correct?  
 5 **A. Yes.**  
 6 **Q.** You agree with me you lifted that exact  
 7 sentence from the eMedicine article on page 7;  
 8 correct?  
 9 **A. Yes.**  
 10 **MR. HUGHES:** Objection. The state would  
 11 object to the term "lifted."  
 12 **MS. DO:** There is an answer.  
 13 **THE COURT:** It's been answered. Okay.  
 14 **Q.** BY MS. DO: And that down to the  
 15 punctuation even; correct?  
 16 **A. Correct.**  
 17 **Q.** Now, you also wrote in your report some  
 18 conclusions or opinions or your thoughts about  
 19 renal failure; correct?  
 20 **A. Yes.**  
 21 **Q.** And that's on the same page of  
 22 Ms. Neuman's report. You wrote: Acute renal  
 23 failure (ARF) is a common complication of heat  
 24 stroke and may be due to hypovolemia, low cardiac  
 25 output, and myoglobinuria (due to rhabdomyolysis).

1 Right?  
 2 **A. Rhabdomyolysis. Yes.**  
 3 **Q.** And, again, you took that sentence  
 4 verbatim including the punctuation from this  
 5 eMedicine article on page 7?  
 6 **A. Correct.**  
 7 **Q.** Right?  
 8 **A. Yes.**  
 9 **Q.** And you didn't cite anywhere in the  
 10 actual report provided to the state and then to the  
 11 defense your source?  
 12 **A. No. I did send you the sources.**  
 13 **Q.** I understand that, Dr. Dickson. I know  
 14 that at some point later you sent me the citations  
 15 or the references. But in the actual report -- I  
 16 mean, if one was to read this, it appears that it's  
 17 your words; correct?  
 18 **A. This was meant as a tutorial on the**  
 19 **findings of heat illness. And those are -- I would**  
 20 **love to say I invented them all, but I didn't.**  
 21 **This is stuff I learned from reading. And this is**  
 22 **meant as a tutorial of what are the symptoms and**  
 23 **signs and findings of heat illness. I definitely**  
 24 **took it from the literature. That's where I get**  
 25 **all my stuff from.**

1 Q. To be specific, you took it from this  
2 article on eMedicine; right?

3 A. **Not all of it. Some of the**  
4 **temperatures -- eMedicine chooses a different**  
5 **temperature than they do in this one. They**  
6 **choose -- I mean, the temperatures are all over the**  
7 **map as far as 104, 106. I chose Tintinalli for**  
8 **that one.**

9 Q. We're going to get to the temperature.

10 But I'm asking you this: If one were to  
11 receive this report on January 10, without any  
12 citations of the sources and not having ever looked  
13 at this article, one would think that these were  
14 your words; correct?

15 A. **You could. Yes.**

16 Q. And you could have written the report to  
17 tutor the state on heat illness based upon your  
18 training and experience; correct?

19 A. **Training and experience, yes. But my**  
20 **training and experience comes from -- my training**  
21 **basis is based off these readings.**

22 Q. In the section where you -- again, it  
23 looks like you, essentially, cut and pasted from  
24 the eMedicine article regarding acute renal  
25 failure; right?

1 A. **Correct.**

2 Q. Down to the parenthesis, the punctuation;  
3 right?

4 A. **Correct.**

5 Q. Myoglobinuria. Can you tell the jury  
6 what that is.

7 A. **Myoglobin is a breakdown product of**  
8 **hemoglobin that can get into your -- it's a**  
9 **breakdown product when you get into heat illness**  
10 **and breakdown of muscle. And it can clog your**  
11 **kidneys.**

12 **That's what happens to people who are**  
13 **dehydrated. They build up this product. Their**  
14 **kidneys, basically, are a filter. And they get**  
15 **overfilled, and then the filter gets clogged. Your**  
16 **kidney stops working.**

17 **And so a sign of that can be myoglobin in**  
18 **your urine. It makes your blood -- your urine look**  
19 **bloody or kind of red-tinged, but there is actually**  
20 **no red blood cells. It's actually the myoglobin in**  
21 **there.**

22 Q. Okay. What does the myoglobin in the  
23 muscle cells operate as? What do they do?

24 A. **The myoglobin -- it's a breakdown**  
25 **product.**

1 Q. But do you know what they do?

2 A. **I don't.**

3 Q. Did you know that they're a reserve for  
4 oxygen?

5 A. **They're reserved for oxygen. What does**  
6 **that mean?**

7 Q. Myoglobin. It's in the muscle cells as a  
8 reserve of oxygen. Do you know that?

9 A. **That they're a reserve of oxygen?**

10 Q. Yes.

11 A. **No. I'm not aware of that.**

12 Q. Okay. Did you see any evidence of  
13 myoglobinuria in this case of Ms. Neuman?

14 A. **There was -- when you look at their**  
15 **urinalysis -- I don't know if it was specifically**  
16 **for Mrs. Neuman. When they do a urinalysis,**  
17 **they'll have -- they'll say blood. And then**  
18 **they'll say red blood cells. And when you have**  
19 **lots of blood detected but no red blood cells,**  
20 **that's usually indicative of myoglobin in the**  
21 **urine.**

22 Q. Okay. Do you know at this date sitting  
23 here whether or not you saw that in Ms. Neuman's  
24 records or not?

25 A. **Specifically in Ms. Neuman's, no. There**

1 **were multiple issues with that. I don't remember**  
2 **who had which. I'd have to look at the labs**  
3 **independently.**

4 Q. Okay. Under hepatic -- which is related  
5 to the liver; correct?

6 A. **Yes.**

7 Q. You wrote in your report on the same  
8 page, quote, rarely fulminate hepatic failure  
9 occurs accompanied by, in some cells -- I'm going  
10 to say this wrong --

11 A. **Encephalopathy.**

12 Q. Thank you. Hypoglycemia and disseminated  
13 intravascular coagulation present through DIC and  
14 bleeding. Correct?

15 A. **Yes.**

16 Q. And, again, looking at page 7 of  
17 eMedicine, you took that sentence verbatim down to  
18 the punctuation mark from this article?

19 A. **Yes.**

20 Q. Is that right?

21 A. **Correct.**

22 Q. Okay. So is it fair to say -- I mean,  
23 I've gone through almost the entire section under  
24 conclusion, opinion -- that what you wrote here was  
25 cut and pasted from the eMedicine article?

1 **A. Well, was this -- the tutorial portion**  
 2 **was partly from -- either from the eMedicine**  
 3 **article, from Tintinalli or from the other two that**  
 4 **I talked about.**

5 **Q.** Well, let's take a look. You're on the  
 6 same page as me; right? 727 is the Bates stamp?

7 **A. Yes.**

8 **Q.** The first full paragraph, numerous CNS  
 9 symptoms. That's from eMedicine; right?

10 **A. Correct.**

11 **Q.** Verbatim; right?

12 **A. Correct. It discusses it in Tintinalli**  
 13 **as well.**

14 **Q.** I understand. I don't know what it looks  
 15 like in Tintinalli, but it's verbatim from this  
 16 eMedicine article; correct?

17 **A. Yes.**

18 **Q.** The second sentence, cerebral edema, also  
 19 was taken verbatim from this eMedicine article?

20 **A. Yes.**

21 **Q.** The third sentence, pulse tachycardia,  
 22 also from this article?

23 **A. Yes.**

24 **Q.** Hypoxia and cyanosis down to the  
 25 punctuation from this article?

1 **A. Yes.**

2 **Q.** Rarely fulminate hepatic failure, which  
 3 we just read, also verbatim from this article?

4 **A. Yes.**

5 **Q.** Acute renal failure, also verbatim from  
 6 this article; right?

7 **A. Yes.**

8 **Q.** Now, is it fair to say, then, having gone  
 9 through one, two, three, four, five -- six of the  
 10 paragraphs under your conclusion and opinion, that  
 11 those were all cut and pasted from this article?

12 **A. The physical aspect of them. Yes.**  
 13 **Physically doing it. But the reading came from all**  
 14 **those articles that they told you. They**  
 15 **corroborate through the text.**

16 **Q.** Okay. Now, on Ms. Neuman's report, the  
 17 front -- the first page you wrote, classic heat  
 18 stroke is characterized by hyperthermia, anhidrosis  
 19 and altered mental status which developed suddenly  
 20 after a period of prolonged elevation and ambient  
 21 temperature.

22 Again, looking at the eMedicine article,  
 23 that came from that article; right?

24 **A. You can read the same sentence in**  
 25 **multiple texts. Yes.**

1 **Q.** I understand. But it came from this  
 2 article; yes?

3 **A. I assume so.**

4 **Q.** Now, when I asked you regarding your  
 5 report, what causes -- first of all, what is  
 6 anhidrosis?

7 **A. Anhidrosis is the lack of sweat.**

8 **Q.** It's when your sweat glands clog and you  
 9 don't sweat anymore; right?

10 **A. Correct.**

11 **Q.** I asked you on January 25th, 2011, since  
 12 you wrote that in your report, what causes  
 13 anhidrosis? And do you remember what your answer  
 14 was?

15 **A. I probably didn't know.**

16 **Q.** Okay. I asked you, what's the  
 17 mechanism -- associate mechanism for anhidrosis?  
 18 And you said, I don't know. Correct?

19 **A. Correct.**

20 **Q.** But that word and that whole paragraph is  
 21 taken from the eMedicine article verbatim; right?

22 **A. You can take that from lots of text. But**  
 23 **yes.**

24 **Q.** Okay. Now I'm going to talk to you about  
 25 the core temperature. In your report you wrote on

1 the second page, temperature, colon: Typically the  
 2 patient's temperature exceeds 40 degrees Celsius,  
 3 comma, but, comma, in the presence of sweating,  
 4 comma, evaporating mechanisms and initiation of  
 5 cooling methods, body temperatures lower than 40  
 6 degrees Celsius are common, and patients may  
 7 actually become hyperthermic. Correct?

8 **A. Correct.**

9 **Q.** And you told this jury earlier under  
 10 direct examination that the dividing or the marker  
 11 between heat stroke and heat exhaustion was the  
 12 presence or lack of altered mental status; correct?

13 **A. That's one of the key factors. Yes.**

14 **Q.** And it seemed to me that you were trying  
 15 to tell the jury that the temperature really  
 16 doesn't make a difference or isn't as critical as  
 17 some might think in your diagnosis; right?

18 **A. Yes.**

19 **Q.** Is that what you're telling the jury?

20 **A. That's what I've told you.**

21 **Q.** Okay. Now, in this report you wrote what  
 22 I've just read: The temperature exceeds --  
 23 typically the patient's temperature exceeds 40  
 24 degrees Celsius. Right?

25 **A. Yes.**

1 Q. Now, I want you to take a look at that  
2 eMedicine article that we've been looking at,  
3 page 6.

4 A. Okay.

5 Q. Under physical vital signs, there is a  
6 paragraph there about temperature; right?

7 A. Yes.

8 Q. And I'm going to read it to you:  
9 Temperature, colon: Typically the patient's  
10 temperature -- I'm sorry.

11 Temperature, colon: Typically the  
12 patient's temperature exceeds 41 degrees Celsius,  
13 comma, but, comma, in the presence of sweating,  
14 evaporating mechanisms and initiation of cooling  
15 methods, body temperatures lower than 41 degrees  
16 Celsius are common.

17 Did I read that right?

18 A. You did.

19 Q. Now I'm going to walk up to you so there  
20 is no mistake about this. You would agree with me  
21 that this eMedicine article, from which you've  
22 already explained to the jury you've taken a number  
23 of paragraphs verbatim, is exactly the same as you  
24 wrote in your report, except for you changed the  
25 threshold temperature; correct?

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1 A. Correct.

2 Q. So in all the paragraphs that we've gone  
3 through, you've, essentially, cut and pasted  
4 exactly into your report; right? Yes?

5 A. Say that again.

6 Q. In all the paragraphs that we've talked  
7 about, having to do with cerebral edema, hepatic  
8 failure, pulmonary pulse, things like that, you  
9 took that verbatim from the eMedicine article  
10 without any changes; right?

11 A. Most of them. Yes.

12 Q. Well, most of them. I counted six up to  
13 this point; right?

14 A. That would be most.

15 Q. And then when you talked about  
16 temperature, which you told this jury didn't  
17 matter, you quoted it verbatim, but you changed --  
18 you lowered the threshold requirement?

19 A. Correct.

20 Q. Why did you do that?

21 A. It's a great question. One of the  
22 challenges in -- I used to do this in my lectures.  
23 If you look at some literature, it says 40 degrees.  
24 Some says 42 degrees. Some says 41 degrees. I  
25 used to put all three in my lecture. And then I

1 got a lot of questions. Well, which is it? Is it  
2 40? Is it 41? Is it 42?

3 I decided to pick one. And that's what  
4 I've done for -- since then. And that's one of the  
5 things that I try to teach all the time is the  
6 temperature -- especially for EMS when they're  
7 taking it out in the field. I don't want them to  
8 make the decision based on the temperature that  
9 they're getting from a tympanic membrane.

10 Someone is out in the heat, and they're  
11 hot, and they're having bad signs and symptoms;  
12 they cool them down. Don't base it on the  
13 temperature.

14 Q. And I understand that explanation. And  
15 the jury has heard from other doctors that there is  
16 a variability in the temperature that is required  
17 for heat stroke.

18 A. Correct.

19 Q. My question is this, Doctor: You went  
20 through the pain of, essentially, cutting and  
21 pasting about six, up to my count, verbatim. But  
22 when it got to temperature, which you said didn't  
23 matter, you changed it; right?

24 A. I wouldn't say I went through the pains.  
25 I can rewrite the whole thing in my own words. But

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1 these guys are really good at what they do. And so  
2 I thought it would be perfect to put that in there.  
3 And I wanted to put in a mix of what the potential  
4 information is.

5 Q. I understand that. But that paragraph,  
6 essentially, is from this article verbatim, except  
7 for you lowered the threshold temperature  
8 requirement; right?

9 A. Correct.

10 Q. Now, this eMedicine article, which you  
11 told me you rely on -- you consulted -- it seems  
12 like you consulted a lot. Nowhere in here does it  
13 say 40 degrees or 104 degrees Fahrenheit; correct?

14 A. I think they use 41.

15 Q. 41.1?

16 A. 41.1.

17 Q. Which is 106 degrees Fahrenheit?

18 A. Correct.

19 Q. And in the paragraph that you copied  
20 verbatim, it was 41 degrees Celsius, but you  
21 changed it to one degree lower?

22 A. That's to be consistent with what I've  
23 done with my lectures.

24 Q. I understand that. But you changed what  
25 was in the article?

1 **A. No. I didn't change what was in the**  
 2 **article. The article says what the article says.**  
 3 **I just took information from another source,**  
 4 **Tintinalli, that says 40.**

5 **Q.** But, Doctor, you wrote this paragraph  
 6 down to the colon and the commas and the periods in  
 7 all the exact same places as I read it in the  
 8 eMedicine article; right?

9 **A. Correct.**

10 **Q.** And so you could say that you,  
 11 essentially, cut and pasted -- listed that  
 12 paragraph from the eMedicine article, but you  
 13 changed the threshold requirement lowering it;  
 14 right?

15 **A. I just went with another source on that**  
 16 **part.**

17 **Q.** Well, we wouldn't know because you didn't  
 18 cite any sources in this report; right?

19 **A. I gave you all my sources.**

20 **Q.** In this report, Doctor.

21 **A. Okay. Yes. You have all my sources.**

22 **Q.** Now, you would agree with me that you did  
 23 exactly the same thing with the report on  
 24 Mr. Shore, 1011, the same thing with Kirby Brown's  
 25 report, 1012; right?

1 **A. Yes.**

2 **Q.** Cut and paste?

3 **A. Same concept.**

4 **Q.** Cut and paste?

5 **A. Yes.**

6 **Q.** Okay. Now, you've given this jury  
 7 testimony that your conclusion in reviewing autopsy  
 8 reports, the medical records, that all three of the  
 9 decedents died of heat stroke; right?

10 **A. Correct.**

11 **Q.** And you understand that you reviewed,  
 12 essentially, everything that Dr. Mosley had at his  
 13 disposal when he wrote his autopsy report?

14 **A. I assume so.**

15 **Q.** And you understand that you read and  
 16 reviewed everything that Dr. Lyon had at his  
 17 disposal when he wrote his conclusion; right?

18 **A. I assume so.**

19 **Q.** Okay. And you reviewed the signs and  
 20 symptoms which you read. But Dr. Cutshall, who  
 21 treated Ms. Neuman, saw with his own eyes; right?

22 **A. Correct.**

23 **Q.** And it's your opinion that you testified  
 24 to in this case the signs and symptoms presented by  
 25 all three decedents are inconsistent with

1 organophosphate toxicity; is that correct?

2 **A. Correct.**

3 **Q.** You told the jury that based upon  
 4 reviewing the same record and information that  
 5 Dr. Mosley and Dr. Lyon had, that you -- you,  
 6 Dr. Dickson, can rule out organophosphates; right?

7 **A. With the information given, yes.**

8 **Q.** The information given to you by the  
 9 state?

10 **A. Correct.**

11 **Q.** Which obviously Dr. Mosley and Dr. Lyon  
 12 also had; right?

13 **A. I would assume so.**

14 **Q.** And you've had a chance to review  
 15 Dr. Paul's report; right?

16 **A. I have.**

17 **Q.** And you understand Dr. Paul, in reviewing  
 18 the signs and symptoms, concluded in his opinion  
 19 that the signs and symptoms were inconsistent with  
 20 a cause of death being heat stroke.

21 Do you understand that?

22 **A. Do I understand that?**

23 **Q.** Yeah.

24 **A. I disagree with his ideology of what heat**  
 25 **stroke is.**

1 **Q.** And I understand that. And I'm going to  
 2 ask you that next. My question is, having read  
 3 Dr. Paul's report, you do know Dr. Paul concluded  
 4 that the signs and symptoms he saw in all three  
 5 decedents were inconsistent with heat stroke;  
 6 correct?

7 **A. That was his opinion.**

8 **Q.** It was also his opinion that he believed  
 9 that all the decedents, including the participants,  
 10 showed or suffered some signs of heat exhaustion;  
 11 right?

12 **A. Correct.**

13 **Q.** And we'll talk about that. But heat  
 14 exhaustion and heat stroke are on opposite ends of  
 15 that continuum of heat illnesses; correct?

16 **A. I wouldn't call them opposite ends. They**  
 17 **are a continuum.**

18 **Q.** Okay. Down on the mild end what do we  
 19 have?

20 **A. The beginning of heat exhaustion.**

21 **Q.** And on the far end of heat illnesses,  
 22 what do we have?

23 **A. Death.**

24 **Q.** What precedes death?

25 **A. Heat stroke.**

1 Q. Okay. That's what I mean when I say  
2 opposite ends of the continuum. Okay?

3 You understand from the information  
4 provided to you by the state that Dr. Paul believed  
5 that the signs and symptoms he saw in reviewing the  
6 same medical records you did were consistent with a  
7 cholinergic toxidrome, possibly organophosphates?  
8 Is that your understanding?

9 A. **My report said that he said it was caused  
10 by something else.**

11 Q. A secondary process; right?

12 A. **Yes.**

13 Q. And has the state told you in an  
14 interview that he expounded on that?

15 A. **There was a concern not specifically  
16 that -- I heard that there was a concern of  
17 organophosphates. I didn't know it was him that  
18 said it.**

19 Q. Okay. And obviously what you're telling  
20 the jury is that you would disagree with Dr. Paul's  
21 conclusion; right?

22 A. **Yes.**

23 Q. You disagree that the evidence is  
24 inconsistent with heat stroke; correct?

25 A. **I disagree.**

1 Q. With Dr. Paul?

2 A. **With Dr. Paul. Yes.**

3 Q. And if Dr. Paul -- or when Dr. Paul  
4 testifies in this case and he testifies he believes  
5 the signs and symptoms are consistent with a  
6 cholinergic toxidrome, possibly organophosphates,  
7 you would disagree with that; right?

8 A. **I would.**

9 Q. Because you have ruled it out in this  
10 case; right?

11 A. **From the best of the knowledge I have,  
12 yes. I would rule it out.**

13 Q. Okay. We talked a little bit earlier how  
14 you would defer to Dr. Brent Cutshall, the doctor  
15 who managed the care for Liz Neuman while she was  
16 in the hospital up to the 17th of October '09;  
17 right?

18 A. **In some respects, yes.**

19 Q. Well, I mean, he has his eyes and ears on  
20 the patients; right?

21 A. **Right.**

22 Q. So you're just reviewing what he wrote.  
23 But he saw those signs and symptoms; right?

24 A. **Correct.**

25 Q. And Dr. Peterson, who's the ER doctor --

1 you're reading what he wrote. But he saw the signs  
2 and symptoms; right?

3 A. **Correct.**

4 Q. So you would defer to those doctors and  
5 their opinions about what caused the death or the  
6 illnesses of anyone who went to the hospital that  
7 night; agreed?

8 A. **Can I expand upon that?**

9 Q. Let me get an answer first, and then  
10 you're more than welcome to.

11 A. **I can't answer with a yes or no.**

12 Q. Okay. You can't tell this jury whether  
13 or not a doctor who actually treated the patient  
14 might know a little better than somebody who is  
15 just reviewing the records cold?

16 A. **The problem is sometimes when -- and we  
17 talked about this earlier. And I know this through  
18 experience. When I see a patient and I'm on the  
19 quality committee in the hospital and we review  
20 records, you have to think about what they know at  
21 that time, not with retrospect to scope. When you  
22 know everything, sometimes you have a different  
23 viewpoint and different knowledge.**

24 **So you can't -- as an ER doc, you can't  
25 expect them to know everything. You just have to**

1 **take the information that they have.**

2 Q. Again, I asked you this earlier,  
3 Dr. Dickson. You have not spoken to any of these  
4 doctors; right?

5 A. **Correct.**

6 Q. So you have no evidence, no basis on  
7 which you would speculate that anyone had less than  
8 the information they needed; right? That's just a  
9 guess?

10 A. **Well, no. Actually I do have evidence  
11 that would say that. Because if you look at the  
12 records, some people say that there are medical  
13 records of people living in a smoke house. I  
14 don't -- didn't hear anything about there being  
15 smoke there.**

16 Q. Well, let's differentiate that. Smoke  
17 house is about some circumstances -- right? -- what  
18 might have happened at the scene; right?

19 A. **Uh-huh.**

20 Q. But I'm talking about the signs and  
21 symptoms. I'm talking about the objective medical  
22 manifestation of signs and symptoms; right?

23 A. **Correct.**

24 Q. And those Dr. Cutshall would have  
25 personal knowledge of as opposed to you reading

1 those things; right?

2 **A. The objective seeing what the patient is**  
3 **exhibiting is based on his -- his description.**

4 **Q.** I understand. And my question to you,  
5 which I'd asked earlier, is very simple. Because  
6 Dr. Cutshall or Dr. Peterson was the actual  
7 treating doctor of these patients, you would  
8 agree -- right? -- you would tell this jury that  
9 their opinions might have more weight because they  
10 actually saw these patients; correct?

11 **A. They saw the patients. Absolutely. But**  
12 **sometimes, as I said earlier, when you're in the**  
13 **middle of it, you don't have all that information.**

14 **Q.** I understand. So are you telling this  
15 jury that your opinion or conclusion is more  
16 accurate than what Dr. Brent Cutshall --

17 **A. No, I'm not.**

18 **Q.** Okay. Are you saying that it might be  
19 more accurate than what Dr. Peterson concluded?

20 **A. No, I'm not.**

21 **Q.** Or Dr. Mosley or Dr. Lyon?

22 **A. No.**

23 **Q.** All right. Did you know that Dr. Brent  
24 Cutshall testified in front of this jury?

25 **A. No, I don't.**

1 **Q.** Did you know that he testified on  
2 March 29, 2011?

3 **A. No idea.**

4 **Q.** And that from the time of October 17,  
5 when Ms. Neuman passed, to the time of trial, he  
6 might have learned some additional information from  
7 the witness stand?

8 **A. He could have.**

9 **Q.** Okay. So just like you're sitting here  
10 after you've been retained in December of 2010, did  
11 you know that Dr. Brent Cutshall testified to this  
12 jury on March 29 that based upon the signs and  
13 symptoms of his patient, Liz Neuman, he could not  
14 rule out organophosphates?

15 **A. I did not know that.**

16 **Q.** Nobody told you?

17 **A. No.**

18 **Q.** So you would agree with me that your  
19 testimony is in direct conflict with Dr. Cutshall's  
20 testimony; correct?

21 MR. HUGHES: Objection, Your Honor.  
22 Argumentative. Her characterization of what  
23 Dr. Cutshall testified to is abbreviated and, I  
24 believe, misstates what he ultimately testified to.

25 THE COURT: Ladies and gentlemen, we have

1 discussed this. You've heard the testimony before.

2 You've heard the question. You have to evaluate  
3 that question and its accuracy.

4 And the witness can only answer if he  
5 can.

6 So I'm going to overrule the objection.  
7 And obviously there can be redirect by Mr. Hughes.

8 MS. DO: Thank you, Your Honor.

9 **Q.** I mean, obviously, Dr. Dickson, you  
10 weren't here when Dr. Cutshall testified on  
11 March 29; right?

12 **A. I was not.**

13 **Q.** So my question is, if this jury heard  
14 Dr. Cutshall testify that based on the signs and  
15 symptoms of Ms. Neuman's condition from October 8  
16 to October 17, 2009, he could not rule out  
17 organophosphates, that's different from your  
18 testimony; right?

19 **A. Correct.**

20 **Q.** That's in conflict with your testimony;  
21 right? You can't have both?

22 **A. Well, can I elaborate on that?**

23 **Q.** If you need to.

24 **A. I guess the question begs is nothing in**  
25 **medicine is 100 percent. I wish it was.**

1 **Organophosphates -- there are tests for them. But**  
2 **they're inadequate at best. And that's why they're**  
3 **not available at most hospitals. They're not**  
4 **available at my hospital. And even when they are**  
5 **available, they're not very good. So you have to**  
6 **make a decision on what's the most likely case.**

7 **Now, is it possible one in a billion? one**  
8 **in a trillion? Sure. Anything is possible. But**  
9 **you have to make your best decision as an educated**  
10 **physician to rule out some things. I wish I could**  
11 **say everything with 100 percent that I'm right.**  
12 **But I can't be. But you have to make -- show the**  
13 **evidence that something is or is not.**

14 **And in this case, the presenting signs**  
15 **and symptoms were not classic of organophosphates.**  
16 **The -- and with multiple patients they are not**  
17 **typical for organophosphates. These people were in**  
18 **a hot environment. And there were more signs of**  
19 **heat illness and heat stroke, in my opinion.**

20 **So to answer the question, there is a**  
21 **possibility for anything in this world. The**  
22 **question is, is it one in a billion?**

23 **Q.** Okay. I don't know where that stat's  
24 coming from. My question to you, Dr. Dickson, is  
25 simple. Dr. Brent Cutshall, who treated the

1 patient -- if he testified to this jury he couldn't  
 2 rule out organophosphates based on the signs and  
 3 symptoms, it's conflicting -- or is in conflict  
 4 with your opinion; correct?  
 5 **A. Yes. Maybe. It depends on what he says**  
 6 **by "rule out." Again, it comes back down to**  
 7 **numbers. I'm not trying to be nitpicking here.**  
 8 **I'm just saying what is possible. I mean, if**  
 9 **you're going to say with 99 percent security that**  
 10 **this does not appear to be organophosphates, does**  
 11 **that rule it out?**

12 **Q.** When you testified under direct  
 13 examination --

14 **A. Correct.**

15 **Q.** -- and Mr. Hughes spent some time with  
 16 you, you told this jury that the signs and symptoms  
 17 were inconsistent; right?

18 **A. Yes.**

19 **Q.** You told this jury that based upon your  
 20 review of the cold records, that doctors who  
 21 treated Ms. Neuman considered and ruled out  
 22 organophosphates; right?

23 **A. Yes.**

24 **Q.** And you now understand, based upon my  
 25 hypothetical, that if Dr. Cutshall testified to

1 this jury on March 29, he could not rule out  
 2 organophosphates, your testimony under direct was  
 3 wrong?

4 **A. I wouldn't say my testimony is wrong.**

5 **Q.** Well --

6 **A. That was my opinion.**

7 **Q.** -- Dr. Dickson, when you said, I believe  
 8 these doctors considered and ruled out  
 9 organophosphates --

10 **A. Correct.**

11 **Q.** -- you gave that testimony to this jury  
 12 without ever having spoken to Dr. Cutshall; right?

13 **A. Correct.**

14 **Q.** Without ever having understood what  
 15 Dr. Cutshall actually said from that witness stand;  
 16 right?

17 **A. Correct.**

18 **Q.** So Dr. Cutshall, from that same witness  
 19 stand that you're sitting on -- sitting at,  
 20 testified that he cannot rule out organophosphates  
 21 based upon the signs and symptoms. Your testimony  
 22 earlier that he ruled it out would be inconsistent;  
 23 right?

24 **A. You could say that.**

25 **Q.** It would be wrong?

1 **A. I wouldn't say it's wrong.**

2 **Q.** Now, if the jury has heard that testimony  
 3 that Dr. Cutshall, who cared for Ms. Neuman from  
 4 October 8 to October 17, 2009, could not rule out  
 5 organophosphates or some cholinergic toxidrome,  
 6 what are we to do with your testimony where you  
 7 said you could rule it out, based on the same signs  
 8 and symptoms?

9 **A. It's an opinion you have to make.**

10 **Q.** This jury has to make; right?

11 **A. Absolutely.**

12 **Q.** And you understand that there is now a  
 13 clear difference between what you said and what  
 14 this doctor, who treated Ms. Neuman, has testified  
 15 to?

16 **MR. HUGHES:** Objection, Your Honor.

17 **THE COURT:** Sustained.

18 **Q.** BY MS. DO: Dr. Robert Lyon -- you also  
 19 reviewed his autopsy report; right?

20 **A. Correct.**

21 **Q.** And based upon your reviewing just the  
 22 cold record of his autopsy report, you believe that  
 23 he concluded that Kirby Brown and James Shore died  
 24 of heat stroke; right?

25 **A. Correct.**

1 **Q.** That's in the autopsy report?

2 **A. Yes.**

3 **Q.** And you've never spoken to Dr. Lyon;  
 4 right?

5 **A. No.**

6 **Q.** And you believe that your testimony today  
 7 is consistent with his that Ms. Brown, Mr. Shore,  
 8 died of heat stroke?

9 **A. Yes.**

10 **Q.** You have talked to the jurors a little  
 11 bit about what does "possible" mean; right?

12 **A. Yes.**

13 **Q.** You've thrown out some numbers, one in a  
 14 billion. And I'm not sure if that comes from  
 15 somewhere or --

16 **A. Just a number.**

17 **Q.** All right. Did you know that Dr. Lyon  
 18 testified to this jury on March 31st of this year?

19 **A. I have no knowledge of anybody testifying**  
 20 **at this trial.**

21 **Q.** And have you spoken to Dr. Lyon at all?

22 **A. No, I have not.**

23 **Q.** So you never called him up and asked him,  
 24 hey, doc, you autopsied Ms. Shore -- I'm sorry.  
 25 Ms. Brown and Mr. Shore? And I'm reviewing your



1 case? Talk to me about that? You never did that?

2 **A. No.**

3 **Q.** Okay. Did you know that Dr. Lyon  
4 testified to this jury that based upon his review  
5 of signs and symptoms and what he knew in this  
6 case, his investigation, that he also could not  
7 rule out organophosphates?

8 **A. I did not know that. No.**

9 **Q.** The state did not provide you with that  
10 information; right?

11 **A. No.**

12 **Q.** And just so I understand, I mean, you  
13 didn't autopsy any of these people. You didn't  
14 treat any of these people. The state hired you to  
15 review their investigation; right?

16 **A. I think they hired me to review the  
17 medical records.**

18 **Q.** Which was part of their investigation;  
19 right?

20 **A. Yes.**

21 **Q.** The two medical examiners had the duty to  
22 investigate the cause of death in this case; right?

23 **A. Correct.**

24 **Q.** And so it was important that you  
25 understood what their opinions were; right?

1 **A. Yes.**

2 **Q.** It was important that you understood how  
3 they got to their opinions; right?

4 **A. Yes.**

5 **Q.** But they never told you -- the state  
6 never told you that any of these medical examiners  
7 testified they cannot rule out organophosphates?

8 **A. No. They never told me that.**

9 **Q.** Dr. Lyon testified to this jury when he  
10 was asked under cross-examination, how sure are  
11 you -- after not being able to rule out  
12 organophosphates, how sure are you that Ms. Brown  
13 and Mr. Shore died of heat stroke?

14 Did you know that?

15 **A. No.**

16 **Q.** That he was asked that question?

17 **A. No.**

18 **Q.** Did you know that Dr. Lyon told this jury  
19 that he can only hold that conclusion to 1 percent  
20 more than 50 --

21 MR. HUGHES: Objection --

22 MS. DO: Let me finish the question.

23 **Q.** 51/49?

24 MR. HUGHES: Objection. Misstates what the  
25 doctor said.

1 THE COURT: Once again, the basic instruction  
2 I've given you a number of times, ladies and  
3 gentlemen.

4 The objection is overruled.

5 And if you can answer that if you can,  
6 Doctor, you may.

7 THE WITNESS: I'm not sure what the question  
8 was. Sorry.

9 THE COURT: If you can rephrase the question  
10 again, Ms. Do.

11 MS. DO: Yes, Your Honor. Thank you.

12 **Q.** Dr. Dickson, my question was, did you  
13 know whether or not Dr. Lyon explained to this jury  
14 that he holds his conclusion that you read in his  
15 autopsy report only to a degree of certainty that  
16 is 50 percent or more?

17 **A. No. I did not know he testified that  
18 way.**

19 **Q.** Okay. And just so we're clear, I'm  
20 looking at a transcript of his testimony, which  
21 I'll show to Mr. Hughes so that there isn't any  
22 question about what his testimony was.

23 Did you know that Dr. Lyon was asked, and  
24 since you have to rule out other causes of death,  
25 Dr. Lyon, with all the information that you were

1 not given, what does that do to the conclusion you  
2 rendered of 51 to 49?

3 His answer: I'm told when information  
4 comes to light. I would keep my -- that opinion.

5 Okay. So you're still at 51/49?

6 Answer: Correct.

7 The state never told you that; right?

8 **A. No.**

9 **Q.** And so we understand what 51/49 means.  
10 You take a coin and you toss it, you have a 50/50  
11 chance of getting heads or tails; right?

12 **A. One each. Yes.**

13 **Q.** Okay. And so what Dr. Lyon is saying,  
14 his conclusion of heat stroke is 1 percent better  
15 than a coin toss --

16 **A. Okay.**

17 **Q.** -- right?

18 **A. That's what he said. I don't know. I  
19 wasn't there.**

20 **Q.** My question to you is, since you told the  
21 jury that his opinion matters to your review of his  
22 opinion --

23 **A. Correct.**

24 **Q.** -- what does that do to your testimony  
25 today when you say, Kirby Brown and James Shore

1 died of heat stroke?

2 **A. Correct.**

3 **Q.** The question is, what does it do to your  
4 opinion?

5 **A. It doesn't change it. The reason being**  
6 **is organophosphates, heat illness, are a clinical**  
7 **diagnosis. There is not a blood test for heat**  
8 **stroke. There is not -- there is a blood test for**  
9 **organophosphates. But it's really, really poor.**  
10 **It's a coin toss.**

11 **So the people that are there seeing the**  
12 **patients, the medical records, the -- are the ones**  
13 **that, in that case, would be a better way to make**  
14 **that decision, in my opinion.**

15 **Q.** Thank you.

16 What degree of certainty do you hold your  
17 opinion that Ms. Brown and Mr. Shore died of heat  
18 stroke?

19 **A. That's where we come back to whatever**  
20 **possibly. I would say 99 percent.**

21 **Q.** You're 99 percent certain that they died  
22 of heat stroke; right?

23 **A. I would say.**

24 **Q.** And you're 99 percent certain they died  
25 of heat stroke based upon reading Dr. Lyon's

1 autopsy report?

2 **A. That was one.**

3 **Q.** And their medical records?

4 **A. Correct.**

5 **Q.** And so you're telling this jury that you  
6 are more certain, 99 percent certain than the  
7 doctor who autopsied them who is 51/49?

8 **A. Yes.**

9 **Q.** Okay. Do you know who Dr. Vincent Furrey  
10 is?

11 **A. I don't.**

12 **Q.** Do you know whether or not Dr. Vincent  
13 Furrey is the doctor who treated Kirby Brown and  
14 James Shore?

15 **A. Could be. Again, I don't remember all**  
16 **the doctors' names.**

17 MS. DO: May I have one moment, Your Honor?

18 THE COURT: Yes.

19 **Q.** BY MS. DO: You did review the medical  
20 records for Kirby Brown and James Shore; right?

21 **A. Sure did. They're right here.**

22 **Q.** And you also reviewed the records of all  
23 the other participants, a total 18, including the  
24 decedents; right?

25 **A. Yes. They're right here.**

1 **Q.** Do you recall reviewing the medical  
2 records of Dennis Mehravar?

3 **A. Yes. I do remember the name.**

4 **Q.** Do you remember Dr. Vincent Furrey  
5 treated Kirby Brown, James Shore and Dennis  
6 Mehravar, if you know?

7 **A. I don't remember the name of the doctors**  
8 **specifically to each patient.**

9 **Q.** Do you know what Dr. Vincent Furrey said  
10 about what caused Ms. Brown and Mr. Shore --  
11 because he treated -- what he said about their  
12 cause of death?

13 **A. Shall we look at it?**

14 **Q.** Let me ask you first. Do you know?

15 **A. Not off the top of my head.**

16 **Q.** Do you want to review the records, then?

17 **A. It would be great. Which one are we**  
18 **talking about?**

19 **Q.** Let's look at Exhibit 190. Well, let me  
20 have you take a look at -- Kirby Brown's medical  
21 record, I believe, is 378. Do you have that?

22 **A. I don't think I have it the same way you**  
23 **do.**

24 **Q.** All right. Let me get it for you. I'm  
25 going to walk up to you with 378, Dr. Dickson.

1 **A. Okay.**

2 **Q.** Do you see on 378 Dr. Vincent Furrey?

3 **A. Yes.**

4 **Q.** Of the Verde Valley Medical Center?

5 **A. Yes.**

6 **Q.** Looking through that, will you confirm  
7 for the jury whether that's Kirby Brown's medical  
8 records.

9 MR. HUGHES: Are we sure about the exhibit  
10 number?

11 MS. DO: I might not be.

12 MR. HUGHES: Could it be 373?

13 MS. DO: It says 378 on the Post-It, but --

14 THE WITNESS: That's James Shore if it's the  
15 52.

16 **Q.** BY MS. DO: Great. Thank you, Doctor.  
17 This is James Shore's; correct?

18 **A. Yes.**

19 **Q.** So Dr. Vincent Furrey treated James  
20 Shore?

21 **A. Correct.**

22 **Q.** And do you know whether or not he also  
23 treated Kirby Brown?

24 **A. I'd have to look again.**

25 **Q.** Go ahead, please.

1 **A. Yes. Vincent Furrey.**

2 **Q.** I'm going to show you Exhibit 192, Dennis  
3 Mehravar's medical records, which you reviewed;  
4 right?

5 **A. They are in here.**

6 **Q.** You would agree with me Dr. Vincent  
7 Furrey?

8 **A. Yes.**

9 **Q.** Also Verde Valley?

10 **A. Yes.**

11 **Q.** You remember what Dr. Vincent Furrey said  
12 about Dennis Mehravar and the two decedents who  
13 passed at his hospital, which would include Kirby  
14 Brown and James Shore?

15 **A. Do I remember what it said?**

16 **Q.** Yes.

17 **A. No. I'd have to review this.**

18 **Q.** Okay. Well, why don't we take a look at  
19 it together.

20 **A. Sounds good.**

21 **Q.** I'm putting up on the screen Exhibit 192.  
22 And I'm going to look at Bates stamp 1811. Are you  
23 there with me?

24 **A. Yes.**

25 **Q.** So the jurors can see, this is

1 Dr. Vincent Furrey on October 8, 2009; correct?

2 **A. Correct.**

3 **Q.** Same doctor who treated Kirby Brown and  
4 James Shore?

5 **A. Correct.**

6 **Q.** Who, based upon your review of the  
7 records in this case, you understand that they were  
8 asystole at the scene; right?

9 **A. Correct.**

10 **Q.** And were pronounced deceased once they  
11 arrived to Verde Valley Medical Center?

12 **A. Not this guy. Not Dennis.**

13 **Q.** No. No. That's not my question.

14 **A. Okay.**

15 **Q.** You understand that Kirby Brown and James  
16 Shore were asystolic at the scene?

17 **A. Yes.**

18 **Q.** Arrived to the hospital and were  
19 pronounced dead on arrival; correct?

20 **A. Correct.**

21 **Q.** Now, that same Dr. Vincent Furrey treated  
22 Mr. Mehravar; right?

23 **A. Correct.**

24 **Q.** And you told this jury that you're 99  
25 percent certain that Ms. Brown and Mr. Shore died

1 of heat stroke.

2 **A. Correct.**

3 **Q.** Even though Dr. Lyon is only 1 percent  
4 better than a coin toss --

5 **A. Okay.**

6 **Q.** -- right?

7 **A. Correct.**

8 **Q.** Let me have you look at this paragraph  
9 where Dr. Vincent Furrey -- you can see it on your  
10 screen; right?

11 **A. Yes, I can.**

12 **Q.** Dr. Vincent Furrey on October 8 in  
13 treating Mr. Mehravar wrote, I spleen. And that's  
14 probably a dictation error; right?

15 **A. Right.**

16 **Q.** I spleen, meaning, I explained, to the  
17 patient that we did not have a cause for his  
18 symptoms or the other people's symptoms that were  
19 in the sweat lodge, including the two people that  
20 died. Right?

21 **A. Correct.**

22 **Q.** So the treating physician, Dr. Vincent  
23 Furrey, who not only saw Ms. Brown and Mr. Shore,  
24 but at least one of the other participants, did not  
25 know that night; right?

1 **A. Correct.**

2 **Q.** And that's based upon not talking about  
3 the circumstances, but the actual signs and  
4 symptoms that are being presented by these  
5 patients; right?

6 **A. Correct.**

7 **Q.** He doesn't know, but you believe 99  
8 percent it's heat stroke?

9 **A. Correct.**

10 **Q.** Let's talk about Dr. Mosley. Dr. Mosley  
11 conducted the autopsy of Ms. Neuman; right?

12 **A. Correct.**

13 **Q.** And you read his report; right?

14 **A. Correct.**

15 **Q.** You also reviewed the medical records?

16 **A. Yes.**

17 **Q.** You understand Dr. Mosley did that too?

18 **A. Did the --**

19 **Q.** Reviewed the medical records.

20 **A. I have to take your word for it. I**  
21 **wasn't with him.**

22 **Q.** Okay. I'll represent to you that he did.

23 **A. Okay.**

24 **Q.** So you assume they're going to be the  
25 same medical records; right?

1 **A. I assume so.**  
 2 **Q.** And then on top of that, he did the  
 3 autopsy for which you read the report?  
 4 **A. Correct.**  
 5 **Q.** Okay. And you told this jury that you  
 6 believe Ms. Neuman died of heat stroke?  
 7 **A. Correct.**  
 8 **Q.** Based upon Dr. Mosley's investigation;  
 9 right?  
 10 **A. That was part of it.**  
 11 **Q.** And how certain are you that she died of  
 12 heat stroke?  
 13 **A. Same. 99.**  
 14 **Q.** Did you know that Dr. Mosley just  
 15 testified to this jury last week?  
 16 **A. No.**  
 17 **Q.** You've never spoken to him; right?  
 18 **A. No.**  
 19 **Q.** Did you know that Dr. Mosley told this  
 20 jury a number of times that he does have doubts  
 21 about his conclusion that this was only heat  
 22 related from Ms. Neuman's cause of death?  
 23 **A. Okay.**  
 24 **Q.** Did you know that?  
 25 **A. I did not.**

1 **Q.** State never told you that?  
 2 **A. No.**  
 3 **Q.** And you're being asked to testify to this  
 4 jury about whether or not these doctors, these  
 5 medical examiners', opinions are consistent with  
 6 yours; right?  
 7 **A. Say it again.**  
 8 **Q.** I'm sorry. That was poorly worded.  
 9 You're being asked -- you know -- you're an outside  
 10 private doctor?  
 11 **A. Correct.**  
 12 **Q.** You come into this case and, essentially,  
 13 review the investigation conducted by Dr. Mosley  
 14 and Dr. Lyon; right?  
 15 **A. Correct.**  
 16 **Q.** So their opinions --  
 17 **A. Well, part of it. Yes.**  
 18 **Q.** And their opinions are important --  
 19 **A. Correct. Absolutely.**  
 20 **Q.** -- to your opinion; right?  
 21 **A. Yes.**  
 22 **Q.** Okay. So what Dr. Mosley ultimately  
 23 believes about the cause of death of Ms. Neuman is  
 24 critical to your opinion; right?  
 25 **A. It's a part of it.**

1 **Q.** It's a part of it?  
 2 **A. Correct.**  
 3 **Q.** Okay. How big a part?  
 4 **A. I couldn't give you a number.**  
 5 **Q.** No number?  
 6 **A. I can't give you a number on that one.**  
 7 **Q.** Okay. And so you would agree that it's a  
 8 significant part of your opinion; right?  
 9 **A. It's a part of it.**  
 10 **Q.** More than 50 percent?  
 11 **A. No.**  
 12 **Q.** Less than 50 percent?  
 13 **A. Yeah.**  
 14 **Q.** Dr. Mosley's opinion -- the doctor, the  
 15 medical examiner, who autopsied Ms. Neuman, you're  
 16 saying is less than 50 percent important to you?  
 17 **A. Correct. The reason I say that is**  
 18 **because, again, we go back to these two diagnosis**  
 19 **are clinical diagnosis. And they're not the ones**  
 20 **that are seeing the patient. So --**  
 21 **Q.** So my question to you, Dr. Dickson, is,  
 22 first of all, you read Dr. Mosley didn't say heat  
 23 stroke -- right? -- in his autopsy report?  
 24 **A. He said, heat illness -- what did he say?**  
 25 **Secondary to heat? I'd have to look at it again.**

1 **Would you like me to get it out for you?**  
 2 **Q.** Sure.  
 3 **A. Sure. So we have James Shore was heat**  
 4 **stroke.**  
 5 **Which person are we talking about?**  
 6 **Q.** Say that one more time.  
 7 **A. Which patient are we talking about?**  
 8 **Q.** Liz Neuman.  
 9 **A. Liz Neuman. That was multisystem organ**  
 10 **failure, hyperthermia, prolonged sweat lodge**  
 11 **exposure, on her supplemental certificate cause of**  
 12 **death.**  
 13 **Q.** Thank you. Since you haven't talked to  
 14 Dr. Mosley, do you have any idea of why Dr. Mosley  
 15 opted for the language that you see versus heat  
 16 stroke, which Dr. Lyon had chosen in February  
 17 of 2010?  
 18 **A. No.**  
 19 **Q.** You have no idea whether or not  
 20 Dr. Mosley, as a clinician, disagreed with the  
 21 criteria applied by Dr. Lyon, for example, in  
 22 diagnosing heat stroke?  
 23 **A. No.**  
 24 **Q.** All right. Now, did you know that  
 25 Dr. Mosley, after writing that report that you

1 reviewed and that you relied on for your opinion,  
2 testified to this jury last week that he has doubts  
3 about whether or not his conclusion that this was  
4 hyperthermia or heat related is all that there is  
5 to this case?

6 **A. I am not aware that he did that.**

7 **Q.** Did you know that Dr. Mosley's doubts  
8 about his conclusion that this was only heat  
9 related were prompted by Dr. Paul's report?

10 **A. No. I had no idea.**

11 **Q.** Did you know that Dr. Mosley testified to  
12 this jury that the signs and symptoms presented in  
13 Ms. Neuman's medical records, the same records you  
14 reviewed, were consistent with a cholinergic  
15 toxidrome, including organophosphates?

16 **A. Who said that? Dr. Mosley?**

17 MR. HUGHES: Objection, Your Honor, that  
18 misstates what Dr. Mosley testified to.

19 THE COURT: I'm going to sustain as to the  
20 form of the question.

21 MS. DO: May I have one moment, Your Honor?

22 THE COURT: Yes.

23 **Q.** BY MS. DO: You don't know whether or not  
24 that was a demonstrative used with Dr. Mosley when  
25 he testified in front of this jury; right?

1 **A. Excuse me?**

2 **Q.** Sorry. You don't know whether or not  
3 this demonstrative that I flipped to on the easel  
4 was used with Dr. Mosley's testimony?

5 **A. No.**

6 **Q.** Okay. Now, if Dr. Mosley testified to  
7 this jury that he does have doubts about his  
8 conclusion that this was only hyperthermia or heat  
9 related, that would be inconsistent with your  
10 testimony today; right?

11 **A. Well, when he says, doubts, what's his  
12 doubt range? I guess that comes back to 1 percent,  
13 one in a million, 50 to 49. That's a wholly  
14 different thing.**

15 **Q.** Well, you're saying you're 99 percent  
16 certain; right?

17 **A. Correct.**

18 **Q.** And I'm not going to quantify what  
19 Dr. Mosley said. He just said, doubts.

20 **A. Okay.**

21 **Q.** And doubt is very different from being 99  
22 percent certain; right?

23 **A. It depends.**

24 **Q.** Depends on what?

25 **A. It's a great question. One of the**

1 **challenges we have in medicine is -- because we're  
2 talking about doctors here. And when -- let me  
3 give you an example. When somebody comes in with  
4 chest pain to my ER, there is a 90 percent  
5 chance -- I admit them to the hospital because I'm  
6 concerned they might have a heart attack. There is  
7 a 90 percent chance they're going to go home and  
8 there is nothing wrong with their heart. Even the  
9 best chest pains in the -- centers in the world  
10 still miss 2 percent of heart attacks. And they're  
11 the best of the best.**

12 **So 98 percent being correct, where is  
13 that -- the doubt can be a pretty narrow margin for  
14 a doc, especially as an ER doc. I'm looking for  
15 one in a million, one in a thousand. Pretty small  
16 numbers.**

17 **So I guess it is an important thing, I  
18 think, to realize from a physician point of view,  
19 when you're talking about life or death, somebody  
20 having a heart attack, 1 percent -- if you've got a  
21 1 percent chance of having a heart attack, I'm  
22 going to be really worried about you. I'm going to  
23 do everything I can to try to help you. So it just  
24 depends.**

25 **Q.** And I think we all understand and

1 appreciate that when you're a doctor and you're  
2 trying to treat a patient -- right? -- you're  
3 making the best decision, best interpretation, at  
4 that moment because you have to treat the patient.  
5 Right?

6 **A. Absolutely.**

7 **Q.** Okay. Now, you understand we're here in  
8 a criminal trial; right?

9 **A. Correct.**

10 **Q.** And you understand this jury is here to  
11 decide whether the state has proven beyond a  
12 reasonable doubt that Mr. Ray killed three people?

13 **A. Okay.**

14 **Q.** Do you understand that?

15 **A. I do.**

16 **Q.** And you understand, based upon your  
17 conclusions that this was heat stroke, that the  
18 state alleges that these three people died of heat  
19 stroke; right?

20 **A. Correct.**

21 **Q.** Okay. Now, you've had the benefit of  
22 reviewing all of the records; right?

23 **A. Correct.**

24 **Q.** Okay. So you're not sitting here under  
25 the gun to treat a patient; right?

1       **A. Uh-huh.**  
 2       **Q.** Is that yes?  
 3       **A. Yes. That is correct.**  
 4       **Q.** So you've, essentially, reviewed the  
 5 investigations conducted by Dr. Mosley and  
 6 Dr. Lyon. And on top of that, you've had the  
 7 benefit of being able to sit back and look at the  
 8 cold record; right?  
 9       **A. Correct.**  
 10       **Q.** But not the benefit of seeing these  
 11 patients with your eyes and ears?  
 12       **A. Correct.**  
 13       **Q.** With your eyes -- right? -- treating them  
 14 with your hands; right?  
 15       **A. Yes.**  
 16       **Q.** And so when you say you're 99 percent  
 17 certain, which is far greater than Dr. Lyon's  
 18 conclusion, and I'm asking you if Dr. Mosley  
 19 testified to this jury that he has doubts, whatever  
 20 that quantity or number you want to assign, that's  
 21 different than you saying 99 percent certain?  
 22       **A. That's where we're getting in the**  
 23 **difference. Because doubts can be very small in a**  
 24 **physician's point of view. But, yes. In the**  
 25 **spirit of it, I'd say it's different.**

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1       **Q.** In the spirit of it, it's very different,  
 2 Dr. Dickson; right?  
 3       **A. You know, again, I'm a needle in the**  
 4 **haystack -- I'm your needle-in-the-haystack doctor.**  
 5 **I mean, that's what -- when you come to the ER --**  
 6 **when you come to the emergency department, I'm**  
 7 **trained to look for the most life-threatening thing**  
 8 **that can happen to you. I might not get the exact**  
 9 **diagnosis. But I want to make sure you're not**  
 10 **going to die or nothing serious is going to happen**  
 11 **to you.**  
 12       **If that's a one in a thousand -- and I'm**  
 13 **going to go the extra mile. I'm going to have**  
 14 **doubt if it's a one in a thousand or one in a**  
 15 **million that I'm missing it. So I'm going to go**  
 16 **that extra mile. This is where the nomenclature, I**  
 17 **guess, is different in a physician realm.**  
 18       **Q.** If you testified today, and I think  
 19 Mr. Hughes asked you a couple times. Signs and  
 20 symptoms in Ms. Neuman's records were consistent  
 21 with heat stroke; right?  
 22       **A. Yes.**  
 23       **Q.** You didn't see any signs and symptoms in  
 24 Ms. Neuman's records that were inconsistent with  
 25 heat stroke; right?

1       **A. No.**  
 2       **Q.** You didn't see anything in Ms. Neuman's  
 3 records that showed consistency with  
 4 organophosphates; right?  
 5       **A. There are overlapping signs and symptoms**  
 6 **in heat illness and organophosphates and a lot of**  
 7 **other things, a huge list.**  
 8       **Q.** And we're going to talk about that. But  
 9 I heard you earlier under direct, and I think you  
 10 even said this to me yesterday on that taped  
 11 interview, you did not see anything in the medical  
 12 records that were consistent with organophosphates.  
 13 Right?  
 14       **A. Big picture did not show**  
 15 **organophosphates.**  
 16       **Q.** Big picture, the signs and symptoms were  
 17 not consistent with OPs; right?  
 18       **A. I guess I don't want to be misquoted. My**  
 19 **concern is that there are signs and symptoms that**  
 20 **apply under both. He asked me if someone has red,**  
 21 **flushed skin. Well, poisoning can cause that. It**  
 22 **also can be caused by heat illness. So you have to**  
 23 **look at the big picture.**  
 24       **Q.** Did you testify earlier, Dr. Dickson,  
 25 that you did not believe the signs and symptoms

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1 presented by any of the decedents were consistent  
 2 with organophosphates?  
 3       **A. Yes.**  
 4       **Q.** All right. So if Dr. Mosley testified to  
 5 this jury that the signs and symptoms -- some of  
 6 the signs and symptoms he saw in Ms. Neuman's  
 7 medical records were inconsistent with heat stroke  
 8 and hyperthermia, that is different from your  
 9 testimony; right?  
 10       **A. I guess in the spirit, you could say yes.**  
 11       **Q.** I'm not sure I'm understanding the  
 12 spirit. Is it different or not?  
 13       **A. Well, again, I just -- I'm not trying to**  
 14 **belabor anything. But there are signs and**  
 15 **symptoms. You can take the pupils. It can go from**  
 16 **organophosphates. It can go from heat illness. It**  
 17 **can be too much heroine. There could be a lot of**  
 18 **different things that can cause these symptoms.**  
 19       **So to say there is no signs that could be**  
 20 **any of these other things -- it could be a**  
 21 **stroke -- is not realistic to say. You can't say**  
 22 **there is no symptoms of organophosphates.**  
 23       **Q.** I thought that's what you told this jury  
 24 under direct?  
 25       **A. I said, under the big picture. We talked**

1 about the box. Toxidromes are a box. And they are  
2 symptoms. And some of them fit in the other boxes.  
3 But you've got to get the whole, big picture to put  
4 it into that box.

5 Q. Okay. And I think I just asked you a few  
6 minutes ago whether or not you believe there were  
7 signs and symptoms that were inconsistent with heat  
8 stroke, and you said no. Right?

9 A. Well, I think what I'm saying is that you  
10 can have signs and symptoms of heat stroke that can  
11 present. Vomiting is a sign of heat stroke. There  
12 is a lot of things that cause vomiting.

13 Q. I appreciate that. And we are going to  
14 talk about that. But my questions are very simple  
15 here, Dr. Dickson. I spent all morning with you  
16 under direct with you telling this jury that these  
17 folks died of heat stroke; right?

18 A. Correct.

19 Q. That you could rule out organophosphates?

20 A. Correct.

21 Q. That you didn't see anything consistent  
22 with organophosphates?

23 A. Their signs and symptoms were  
24 inconsistent with organophosphates.

25 Q. In fact, you believe that every medical

1 examiner, every doctor, that you reviewed their  
2 case work, had ruled out organophosphates; right?

3 A. No. I said that there are people that  
4 took care of them. Not the medical examiners. I  
5 said the people that were -- the emergency  
6 physicians thought about it. The intensive care  
7 units thought about it. They talked to  
8 toxicologists. They looked at the different signs.

9 They said, well -- if you look at their  
10 rationale on the record, they said, well, the  
11 pinpoint pupils could be cholinergic. But they're  
12 very dry. So that's more anticholinergic. So they  
13 weren't being able to find it fitting into that  
14 box. I don't think I said anything about the  
15 medical examiners.

16 Q. I stand corrected. You're right. The  
17 ER's and the ICU doctors you testified this morning  
18 considered and ruled it out; right?

19 A. Correct.

20 Q. Dr. Mosley. If he testified there were  
21 signs and symptoms, specifically miosis and  
22 foaming, that are inconsistent with heat stroke,  
23 that's in conflict with your testimony to this  
24 jury; right?

25 A. Miosis and foaming are consistent with

1 heat stroke. So that's definitely -- that is in  
2 conflict.

3 Q. Right. Because Dr. Mosley, who autopsied  
4 Ms. Neuman, is saying that the two signs that are  
5 inconsistent with heat stroke, miosis and foaming;  
6 right?

7 A. If that's what you're telling me. I  
8 don't know. But if you're saying yes, yes.

9 Q. Okay. Well, the jury can determine that.  
10 If that's what Dr. Mosley testified to just last  
11 week, you're saying the complete opposite, which is  
12 miosis and foaming is consistent with heat stroke;  
13 right?

14 A. Absolutely.

15 Q. And since Dr. Mosley is a medical  
16 examiner that the state had conduct the  
17 investigation into cause of death here, what are we  
18 to do with this conflict between his testimony and  
19 yours?

20 A. Look at the literature.

21 Q. Look at the literature?

22 A. The reading. You can take my opinion.  
23 But my opinion, as you nicely heard, was based on  
24 the literature, what's in the textbooks, what's in  
25 the written literature. I don't make up -- this is

1 called "evidence-based medicine." It's not opinion  
2 based. It's based on what is in the literature and  
3 what the research has shown. This isn't just my  
4 opinion.

5 I am a doctor that has a lot of  
6 experience in heat illness. But I take my  
7 information from the literature. And it clearly  
8 says in the literature that you can have pinpoint  
9 pupils, and you can have pulmonary edema from heat  
10 illness.

11 Q. And it's clearly in the literature,  
12 according to your testimony, that you would not see  
13 miosis and pulmon -- you said pink, frothy sputum.  
14 You're not going to see that with organophosphate  
15 toxicity; right?

16 A. Generally not. I mean, you can get  
17 pulmonary edema as a late finding. But most of the  
18 people that we -- that I have seen, it's drooling,  
19 lacrimation, running their eyes, drooling. That's  
20 more of the symptoms that I have seen.

21 Q. As an ER doctor, you consult with text  
22 and -- textbooks on toxicologic emergencies and  
23 emergency medicine; right?

24 A. Yes.

25 Q. One of them is Tintinalli, that you

1 referred to; right?

2 **A. Yes.**

3 **Q.** Have you ever seen -- Dr. Mosley said

4 this is something he might rely on -- Goldfrank's

5 Toxicologic Emergencies?

6 **A. I don't use this one. No.**

7 **Q.** Okay. Any reason to dispute this is a

8 publication for emergency medicine doctors? You

9 can see all the people on the editor's list; right?

10 **A. Yep.**

11 **Q.** Now, you said you would not see frothy

12 sputum or pink sputum in the case of

13 organophosphates normally; right?

14 **A. I said you can see them. But in my**

15 **symptoms, the people I've seen, you'd normally see**

16 **drooling.**

17 **Q.** All right. So you're telling this jury

18 you can have frothy sputum in organophosphates;

19 right?

20 **A. Yes. You can have pulmonary -- pulmonary**

21 **edema causes pink, frothy sputum. So if you have**

22 **pulmonary edema, you can get pink, frothy sputum.**

23 **Q.** And you believe that that's consistent

24 with what you told this jury under direct this

25 morning?

1 **A. Yes.**

2 **Q.** Okay. So what I just showed you is a

3 chapter from this book called "Insecticides

4 Organophosphates, Compounds and Carbonates"; right?

5 **A. Yes.**

6 **Q.** And you know that carbonates is another

7 form of pesticide?

8 **A. I do.**

9 **Q.** It's a more milder form; right?

10 **A. Yes.**

11 **Q.** Do you know why it's more mild?

12 **A. Well, it doesn't cause something called**

13 **"aging." One of the dangerous things with**

14 **organophosphates and these ones like sarin and**

15 **these things that happen on, like, the Japanese**

16 **subway, it's an -- and organophosphates can bind**

17 **irreversibly. And that's called "aging." And**

18 **unless you give a certain medication called "2-PAM"**

19 **within that time, it ages. Then there is no**

20 **reversing it. So it can be very dangerous when**

21 **they use these as things of mass destruction. And**

22 **carbonates don't have that quality, to answer the**

23 **question.**

24 **Q.** Thank you.

25 Looking at just the first page I flipped

1 to in this particular chapter on organophosphorus

2 compounds and carbonates, you see the two areas

3 that I highlighted?

4 **A. Yes.**

5 **Q.** Pink-tinged frothy sputum?

6 **A. That is highlighted.**

7 **Q.** Frothy sputum?

8 **A. That is highlighted.**

9 **Q.** And an article of about organophosphorus

10 compounds; right?

11 **A. Correct.**

12 **Q.** And you had told the jury that you can

13 see miosis and also miosis being pinpoint pupils

14 and large pupils, mydriasis; right?

15 **A. Correct.**

16 **Q.** In the same article do you see here where

17 it says, of these signs and symptoms, miosis may be

18 the most consistently encountered sign?

19 **A. In that one section, yeah. That's what**

20 **it says.**

21 **Q.** So, again, is it your testimony now that

22 miosis, pinpoint pupils, and frothy sputum is

23 consistent with organophosphate toxicity?

24 **A. It can be in organophosphates. Yes.**

25 **It's one of the things that can be in**

1 **organophosphates.**

2 MS. DO: Your Honor, may we take a break now?

3 THE COURT: Yes. A relatively short break,

4 about 10 minutes. Please be reassembled at 20

5 after.

6 Remember the admonition.

7 (Recess.)

8 THE COURT: The record will show the presence

9 of Mr. Ray, the attorneys and the jury.

10 Dr. Dickson is on the witness stand.

11 Ms. Do.

12 MS. DO: Thank you, Your Honor.

13 **Q.** Thank you for your patience, Dr. Dickson.

14 Before we took that break, we were

15 talking about Dr. Mosley. And you now are kind of

16 understanding that a number of other doctors have

17 testified to this jury before you; correct?

18 **A. Yes.**

19 **Q.** So we have Dr. Dickson, you, saying it's

20 heat stroke; correct?

21 **A. Correct.**

22 **Q.** Saying that you rule out

23 organophosphates, right?

24 **A. Correct.**

25 **Q.** That the signs and symptoms you saw in



1 the big picture were inconsistent with  
 2 organophosphates; correct?  
 3 **A. Correct.**  
 4 **Q.** And that Dr. Ian Paul, you believe, is  
 5 wrong; correct?  
 6 **A. He is wrong. Yes.**  
 7 **Q.** All right.  
 8 **A. I would say so. We have differing**  
 9 **opinions as to the cause of death. So yes.**  
 10 **Q.** Understood. Now, you now know that  
 11 Dr. Cutshall has testified; correct?  
 12 **A. Correct.**  
 13 **Q.** Okay. And so if the jury heard  
 14 Dr. Cutshall's testimony that he cannot rule out  
 15 organophosphates, he would be in a different box  
 16 than you; correct?  
 17 **A. Well, again, that comes back to the old**  
 18 **question. Now we're coming back to the same**  
 19 **question of what do you consider, rule out. Is**  
 20 **1 percent in Dr. Cutshall's mind enough to say I**  
 21 **can't rule it out without the adequate -- there**  
 22 **isn't a test for it, so you have to say with your**  
 23 **best judgment --**  
 24 **Q.** There isn't --  
 25 **A. -- to rule it out.**

1 **Q.** I'm sorry. I didn't mean to interrupt  
 2 you. Were you done?  
 3 **A. No. Go ahead.**  
 4 **Q.** No. Please finish.  
 5 **A. What I was saying, what we discussed**  
 6 **earlier is, the symptoms that we're talking about**  
 7 **are heat stroke. There is not a blood test for**  
 8 **this. There is sort of a blood test for**  
 9 **organophosphates. But unfortunately, it's not a**  
 10 **very good test. It's a flip of the coin, so to**  
 11 **speak, the term you used. So it's not something I**  
 12 **would rely on.**  
 13 **So you have to make the decision based on**  
 14 **your clinical findings. It's a clinical diagnosis.**  
 15 **Now, when Dr. Cutshall makes his decision**  
 16 **on whether he cannot rule it out, I wouldn't rule**  
 17 **it out with 99 percent security that I was correct.**  
 18 **But he might have a different threshold than I do.**  
 19 **Q.** When Mr. Hughes asked you if you were  
 20 able to rule out organophosphates, your testimony  
 21 on direct was yes --  
 22 **A. Correct.**  
 23 **Q.** -- I rule out organophosphates. Right?  
 24 **A. Correct.**  
 25 **Q.** I don't remember you asking Mr. Hughes,

1 well, what degree of probability are you asking.  
 2 Right?  
 3 **A. I didn't ask him that. No.**  
 4 **Q.** You didn't make any mention about having  
 5 an issue with what does "rule out" mean; right?  
 6 **A. Correct.**  
 7 **Q.** You answered the question just fine;  
 8 correct?  
 9 **A. Yes.**  
 10 **Q.** Now, Dr. Cutshall. If he says -- If he  
 11 testified to this jury that he cannot rule out OPs,  
 12 that's different than you; right?  
 13 **A. Correct.**  
 14 **Q.** Now, if he says, the signs and symptoms  
 15 are consistent -- and, I'm sorry. I'm writing like  
 16 a doctor -- right? -- messy? Signs and symptoms  
 17 consistent with organophosphates. That's different  
 18 than you; right?  
 19 **A. He said the big picture of his signs and**  
 20 **symptoms were consistent with organophosphates.**  
 21 **That's what you're telling me?**  
 22 **Q.** If he testifies to this jury that based  
 23 upon the signs and symptoms, primarily the pinpoint  
 24 pupils and the foaming, that is consistent with  
 25 organophosphates, that would be different with

1 yours saying it's inconsistent; right?  
 2 **A. Yes, it would.**  
 3 **Q.** Okay. And you told the jury that you  
 4 believe Dr. Cutshall had ultimately determined that  
 5 Ms. Neuman, his patient, died of heat stroke;  
 6 right?  
 7 **A. Correct.**  
 8 **Q.** You saw that in the medical records?  
 9 **A. Correct.**  
 10 **Q.** Did you know that Dr. Cutshall explained  
 11 to this jury the reason why he wrote heat stroke in  
 12 the final diagnosis had something to do with  
 13 billing?  
 14 **MR. HUGHES:** Objection. Misstates the  
 15 testimony.  
 16 **THE COURT:** I'm sustaining as to the form of  
 17 the question.  
 18 **Q.** BY MS. DO: Part of the reason why you  
 19 felt comfortable concluding that Ms. Neuman died of  
 20 heat stroke in this case was your belief that  
 21 Dr. Cutshall had in his death summary concluded  
 22 that Ms. Neuman died of heat stroke; correct?  
 23 **A. Correct.**  
 24 **Q.** So if Dr. Cutshall testified to this jury  
 25 that that opinion, ultimate opinion, of heat stroke

1 had something to do with billing, would that change  
 2 your opinion?  
 3 **A. Something to do with billing. What does**  
 4 **that mean?**  
 5 **Q.** Well, you're a doctor of 11 years?  
 6 **A. Correct.**  
 7 **Q.** And you understand that when you treat a  
 8 patient, there are codes that you apply that get  
 9 entered into the computer --  
 10 **A. Correct.**  
 11 **Q.** -- for billing purposes; right?  
 12 **A. Yes.**  
 13 **Q.** And I understand that in the hospital  
 14 setting and the medical setting, they're pretty  
 15 strict about those codes?  
 16 **A. Yes.**  
 17 **Q.** So that's what I mean when I say  
 18 "billing." You understand now?  
 19 **A. Well, no. Because it's funny you say**  
 20 **that. Because billing is based -- I can write any**  
 21 **diagnosis I want on the end. But that's not what**  
 22 **it gets coded as. Coders actually are people that**  
 23 **are independent of myself. And they look through**  
 24 **the medical record to show that there is proof of**  
 25 **it.**

1 **So I can say the sky is green, the sky is**  
 2 **green, the sky is green, throughout my whole**  
 3 **dictation and at the very end say the sky is blue.**  
 4 **Well, they're not going to code sky is blue.**  
 5 **They're going to code sky is green because that's**  
 6 **what I said through the whole body. So what you**  
 7 **actually write doesn't really affect your billing**  
 8 **as far as a diagnosis.**  
 9 **Q.** Perhaps in your experience. But my  
 10 question to you is, Dr. Dickson, is that you didn't  
 11 hear Dr. Cutshall testify on March 29; correct?  
 12 **A. Correct.**  
 13 **Q.** And my question to you, since you told  
 14 this jury that your opinion about heat stroke  
 15 relied on Dr. Cutshall's final diagnosis of heat  
 16 stroke; right?  
 17 **A. Correct.**  
 18 **Q.** And I'm asking you, if Dr. Cutshall  
 19 testified -- if he testified the reasons why he had  
 20 the words "heat stroke" in his death summary had  
 21 something to do with billing, does that affect your  
 22 opinion?  
 23 **A. No.**  
 24 **Q.** Doesn't at all?  
 25 **A. No. Because his whole process back to**

1 **the billing question is you look at the meat of the**  
 2 **process of what his notes were, why he came up with**  
 3 **that diagnosis, the thought that went into it, is**  
 4 **clear that it goes that direction.**  
 5 **Q.** You know that Dr. Cutshall wrote,  
 6 respiratory failure secondary to heat stroke;  
 7 right?  
 8 **A. Yes.**  
 9 **Q.** As a cause of death; right?  
 10 **A. Sure.**  
 11 **Q.** And so if I ask Dr. Cutshall on March 29,  
 12 when he testified in front of this jury, the change  
 13 from your admitting diagnosis to your final  
 14 diagnosis that included heat stroke -- why did that  
 15 occur? And if Dr. Cutshall said, part of that  
 16 is -- some of it is to do with medical billing.  
 17 And it's not a cause of death to say respiratory  
 18 failure for medical billing. And so there needs to  
 19 be some clarification when you're approaching a  
 20 death summary of what billable causes of death and  
 21 what can be written up on a death certificate.  
 22 They won't accept vaguer answers than that. They  
 23 need specifics of what the cause was at the time.  
 24 If Dr. Cutshall testified to that to this  
 25 jury, you're saying that that wouldn't shake your

1 opinion at all about heat stroke for Ms. Neuman?  
 2 **A. No.**  
 3 **Q.** All right. Now, you also know that  
 4 Dr. Lyon testified right after Dr. Cutshall; right?  
 5 **A. I didn't know when temporally --**  
 6 **Q.** All right. Just assume that he did.  
 7 **A. Okay.**  
 8 **Q.** Now, if Dr. Lyon testified he could not  
 9 rule out organophosphates, that some of the signs  
 10 and symptoms described to him are consistent with  
 11 organophosphates, again, different from you; right?  
 12 **A. Yes.**  
 13 **Q.** Now, if Dr. Mosley testified, also cannot  
 14 rule out organophosphates; signs and symptoms,  
 15 primarily the pinpoint pupils and the foaming, are  
 16 consistent with organophosphates, he'd be different  
 17 from your testimony; right?  
 18 **A. Correct.**  
 19 **Q.** Now -- and you understand, having seen  
 20 Dr. Paul's report, that Dr. Paul believes you  
 21 cannot rule out organophosphates, and that signs  
 22 and symptoms are consistent with organophosphates;  
 23 correct?  
 24 **A. That's what Dr. Paul -- he didn't say --**  
 25 **my report from Dr. Paul does not say that he said**

1 **organophosphates. It said, some other unknown**  
2 **substance.**

3 **Q.** Well, Mr. Hughes called you. He told me  
4 yesterday he called you while you were in Tahoe.  
5 Right?

6 **A.** Uh-huh.

7 **Q.** And told you about organophosphates in  
8 this case?

9 **A.** Correct.

10 **Q.** And that just occurred on March 30th;  
11 right?

12 **A.** Correct.

13 **Q.** And you understood that that came from  
14 Dr. Paul?

15 **A.** I didn't understand where it came from.  
16 I heard that there was a theory.

17 **Q.** All right. So Dr. Paul, when he  
18 testifies to this jury -- consistent with  
19 Dr. Cutshall, Lyon and Mosley, testifies that he  
20 cannot rule out organophosphates because the signs  
21 and symptoms of these particular diseases were  
22 consistent with organophosphates, that would make  
23 four doctors -- right? -- that are in conflict with  
24 your testimony?

25 **A.** I don't know if they're in conflict.

1 **They're saying that there are signs and symptoms**  
2 **that can be -- I think we're saying the same things**  
3 **in some of the same respects. There are signs and**  
4 **symptoms that can be in heat illness that can be in**  
5 **organophosphates. So I don't know if we're saying**  
6 **completely different things.**

7 **From what you told me, that they said**  
8 **they can't rule it out but they're secure in their**  
9 **diagnosis, they were greater than 50 percent, you**  
10 **said, for one. Another one was -- that's the**  
11 **question, is whether they -- you know -- can they**  
12 **say it was 100 percent versus 99.**

13 **Q.** Might it, then, not be important that you  
14 had spoken to Dr. Cutshall about this case?

15 **A.** Say that again.

16 **Q.** Maybe that would make it important for to  
17 you talk to Dr. Cutshall about this case before you  
18 reached an opinion; right?

19 **A.** I try to look at the objective criteria.  
20 **And that's what people are seeing when it's**  
21 **happening. I try to look at that first.**

22 **Q.** The people who are seeing it when it  
23 happens?

24 **A.** Correct.

25 **Q.** So my question to you, Dr. Dickson, is

1 there are four doctors now that you're aware of who  
2 say they cannot rule out organophosphates, that the  
3 signs and symptoms are consistent with  
4 organophosphates; right?

5 **A.** I didn't hear you say that they're -- all  
6 their signs and symptoms are consistent with  
7 organophosphates. I heard that there are some  
8 signs and symptoms that can present as  
9 organophosphates. But I didn't hear you say that  
10 they are saying -- is that what you're testifying,  
11 their testimony said that all these signs and  
12 symptoms are only organophosphates, not heat  
13 illness?

14 **Q.** I'll repeat the question.

15 **A.** Okay.

16 **Q.** Four doctors -- Cutshall, Lyon, Mosley,  
17 Paul -- all four of those doctors say they cannot  
18 rule out organophosphates because there are signs  
19 and symptoms consistent with organophosphates.

20 We're on the same page?

21 **A.** Yes.

22 **Q.** All right. So those are four doctors we  
23 have here. And you're the only one up here who has  
24 said you rule out organophosphates; right?

25 **A.** Correct.

1 **Q.** You're the only one up here who say the  
2 signs and symptoms and the big picture are  
3 inconsistent with organophosphates; right?

4 **A.** So you're telling me that I'm the only  
5 one that said in the big picture these are -- that  
6 the doctors all said that they are -- there is no  
7 signs and symptoms -- they're all consistent only  
8 with organophosphates?

9 **Q.** When you say, "big picture," I don't know  
10 what you mean. But I mean you've reviewed all the  
11 medical records; right?

12 **A.** Yeah.

13 **Q.** All the autopsy reports; right?

14 **A.** Correct.

15 **Q.** And I'm saying that these doctors have  
16 done the same thing --

17 **A.** Correct.

18 **Q.** -- right? So in reviewing the same thing  
19 these doctors have, you've reached the opinion that  
20 you rule out organophosphates; right?

21 **A.** Correct.

22 **Q.** You've reached the opinion that there are  
23 signs and symptoms inconsistent with  
24 organophosphates; right?

25 **A.** That there are signs and symptoms

1 inconsistent with organophosphates. Yes. I  
2 reached that opinion.

3 Q. You're the outlier here, wouldn't say?

4 A. That's the question.

5 Q. That's the question I'm asking you.

6 You're the outlier here; right?

7 A. That's the question. You're telling me  
8 about a testimony that these doctors made that  
9 you're saying that they said all these doctors  
10 completely recanted everything that they said in  
11 the medical record and said, I'm completely wrong.  
12 This is not heat illness. This is not heat stroke.  
13 And this is organophosphates.

14 Is that what you're telling me?

15 Q. I don't believe that's what I told you at  
16 all.

17 A. Okay. Well, then explain it to me.  
18 Because what you're writing here I think implies  
19 that.

20 Q. What I've written there, Dr. Dickson, is  
21 simply Dr. Cutshall, Dr. Lyon, Dr. Mosley, and when  
22 Dr. Paul testifies -- all these doctors, if the  
23 jury has heard this evidence, obviously they  
24 decide; right?

25 A. Absolutely.

1 Q. And so I'm giving you a hypothetical. If  
2 these four doctors testified or will testify they  
3 cannot rule out organophosphates, the signs and  
4 symptoms are consistent with organophosphates, that  
5 is conflicting with your testimony; right?

6 A. If hypothetically they said that, then  
7 yes.

8 Q. And so then that would make you  
9 hypothetically the outlier; right?

10 A. Well, yes. Hypothetically, yes.

11 Q. Okay. So moving from the hypothetical,  
12 if the jury decides ultimately those facts are  
13 true, four doctors against Dr. Dickson, you are the  
14 outlier; right?

15 A. Absolutely. That's their decision.

16 Q. Now, you had told Mr. Hughes that another  
17 reason you reached the conclusion that you have in  
18 this case -- heat stroke -- is because you reviewed  
19 the other participants' records; right?

20 A. Yes.

21 Q. Did you see anything in any of the  
22 participants' records that told you this was not  
23 heat stroke?

24 A. That this was not heat stroke. Well,  
25 again, it comes down to the information you have.

1 You make the best decision with the information.

2 The preponderance of the -- what I read were  
3 symptoms consistent with heat stroke.

4 Q. My question to you, Doctor, since you  
5 reviewed the medical records, did you see any  
6 medical records where a doctor said not heat  
7 stroke?

8 A. I'm sorry. Then I'm maybe missing the  
9 question. Say it again.

10 Q. I'll repeat it. I know it's been a long  
11 day. In reviewing the medical records, did you see  
12 any doctor reach the conclusion not heat stroke?

13 A. It's possible. I read a lot of them.  
14 But I don't remember specifically somebody saying  
15 that.

16 Q. Okay. So when you earlier told the jury  
17 that you didn't believe there were any evidence or  
18 signs and symptoms that could rule out heat stroke,  
19 at this point you're not sure whether or not you  
20 did, in fact, see a doctor say not heat stroke?

21 A. There is always that possibility.

22 Q. Then let me show you Mr. Stephen Ray's  
23 medical records, Exhibit 213. You did get this  
24 from the state; right?

25 A. Yep.

1 Q. We're going to take a look at two pages.

2 A. Oh. Yeah. This was the neurologist. I  
3 remember this one.

4 Q. The neurologist?

5 A. Yeah. I think this is the neurologist  
6 one.

7 Q. I'm not sure what you mean by that.  
8 Let's go to -- I'm at Bates stamp 7097, Doctor, in  
9 those medical records.

10 A. Yes.

11 Q. Okay. And the jury has it up on the  
12 screen. The top right shows a Dr. EmmaLee Kennedy;  
13 right?

14 A. Correct.

15 Q. And so the jury understands, when a  
16 doctor dictates, meaning talks into a digital  
17 recorder or whatever, there is a sign date; right?

18 A. Correct.

19 Q. And this indicates that the date that  
20 Dr. Kennedy signed the report was October 27, 2009;  
21 right?

22 A. That's when they signed it. Correct.

23 Q. And then this date over here, the result  
24 date, indicates when she would have examined the  
25 patient, October 10; right?

1 **A. If that's how their system works, yes.**  
 2 **Q.** Any reason to dispute that?  
 3 **A. No.**  
 4 **Q.** And on October 10, 2009, when Dr. Kennedy  
 5 looked at Mr. Stephen Ray, she wrote, the patient  
 6 does not appear to have heat stroke; correct?  
 7 **A. Correct.**  
 8 **Q.** Did that weigh at all into your  
 9 conclusion? Because earlier you told Mr. Hughes  
 10 that you would expect the same cause for all 18  
 11 participants because they came from one incident;  
 12 right?  
 13 **A. Correct.**  
 14 **Q.** Did you consider and weigh the fact that  
 15 there was a doctor who looked at Mr. Ray, Stephen  
 16 Ray, a critically ill admitted to Flagstaff Medical  
 17 Center, who on October 10, I believe, one or two  
 18 days before he was discharged, said, the patient  
 19 does not appear to have heat stroke?  
 20 **A. I remember actually reading this one.**  
 21 **Yes. I did consider that.**  
 22 **Q.** But it didn't change your opinion at all?  
 23 **A. No.**  
 24 **Q.** That's Dr. Kennedy. Now, let's take a  
 25 look at Dr. Neff, who saw the same patient on

1 October 11. We're going to go to Bates stamp 7095.  
 2 Okay. And you see up here -- are you on that page,  
 3 Doctor? 7095?  
 4 **A. I am.**  
 5 **Q.** This is Dr. Neff, Richard Neff, signed on  
 6 October 11, 2009; correct?  
 7 **A. Correct.**  
 8 **Q.** A different doctor than Dr. Kennedy?  
 9 **A. Correct.**  
 10 **Q.** Same patient?  
 11 **A. Correct.**  
 12 **Q.** And his report shows the result date of  
 13 October 11, 2009, indicating, at least to your  
 14 knowledge, that's the date the patient was seen by  
 15 Dr. Neff?  
 16 **A. Yes.**  
 17 **Q.** In reviewing the medical records, did you  
 18 note that Dr. Neff, the second doctor seeing  
 19 Stephen Ray, wrote, the patient does not appear to  
 20 have had heat stroke?  
 21 **A. Yes.**  
 22 **Q.** A second doctor seeing the same patient  
 23 said that. Did that weigh into your conclusion at  
 24 all?  
 25 **A. Absolutely. This goes back to what I**

1 talked about earlier is when you -- early on in the  
 2 diagnosis, it's a classic problem for ER docs.  
 3 You're trying to find the answer with this much  
 4 information. And having the luxury to now look at  
 5 this after I've got all the information, you can  
 6 see where a doctor can get down maybe the wrong  
 7 path.  
 8 **So the preponderance of evidence shows**  
 9 **that they were down the wrong path at this time.**  
 10 **And he also compared it to what their signs and**  
 11 **symptoms were. You go back to the literature, not**  
 12 **just -- this is a quote of mine. I teach it to my**  
 13 **students. This is isn't just semantics and telling**  
 14 **you things. This is evidence based. I don't just**  
 15 **tell people in my lectures my opinions. As you**  
 16 **nicely pointed them out, I take them from the**  
 17 **literature. And you go back to the literature to**  
 18 **look for those signs and symptoms.**  
 19 **Q.** You go to the literature to learn what  
 20 the signs and symptoms are possibly for each  
 21 disorder. But you go to the signs and symptoms of  
 22 the patient to determine what that patient suffered  
 23 from; right?  
 24 **A. Yes.**  
 25 **Q.** So Stephen Ray -- you're telling this

1 jury that you did consider two different doctors'  
 2 opinion on October 10, October 11, that Mr. Ray did  
 3 not have heat stroke, but you're discounting it  
 4 because they went down the wrong path?  
 5 **A. Correct.**  
 6 **Q.** So --  
 7 **A. Or maybe they didn't have all the**  
 8 **information they needed at that time to make that**  
 9 **decision.**  
 10 **Q.** Dr. Dickson, have you talked to  
 11 Dr. Kennedy?  
 12 **A. No.**  
 13 **Q.** Have you talked to Dr. Neff?  
 14 **A. No.**  
 15 **Q.** And yet you're willing to on this day  
 16 tell the jury that these two doctors, whom you've  
 17 never met, never spoken to, were wrong?  
 18 **A. In this case at this point in time, they**  
 19 **might not have had all the information they needed**  
 20 **to make that decision.**  
 21 **Q.** Do you know that for a fact?  
 22 **A. I said, no. They might not.**  
 23 **Q.** So you don't know that for a fact; right?  
 24 **A. No.**  
 25 **Q.** You're just guessing?

1 **A. Absolutely. I don't know what**  
 2 **information they had when they made those**  
 3 **decisions. And that's what I'm saying. I've got**  
 4 **the luxury of now looking at the bigger picture.**  
 5 **Q.** Okay. I understand that. You said,  
 6 absolutely you're just guessing that these doctors  
 7 didn't have all their information when they, two  
 8 independent doctors, said Mr. Ray did not have heat  
 9 stroke; correct?  
 10 **A. At that time they might not have had the**  
 11 **information they needed. That's correct. And I**  
 12 **cannot verify that because I've never talked to**  
 13 **them.**  
 14 **Q.** Okay. So don't you think that it's  
 15 important before you -- I mean, what you say on  
 16 that witness stand is evidence. You understand  
 17 that, right?  
 18 **A. Absolutely.**  
 19 **Q.** Don't you think it's important before you  
 20 reach a conclusion that you offer to this jury that  
 21 you base that not on guesses and speculation, but  
 22 actual facts that you know?  
 23 **A. And these are the facts that I know. And**  
 24 **this is what I based it on.**  
 25 **Q.** And in what you're pointing to those

1 medical records, that stack, is there anything in  
 2 there that tells you Dr. Kennedy didn't have the  
 3 information she needed to determine, in her  
 4 opinion, that Mr. Ray did not have heat stroke?  
 5 **A. It's pretty early on in the symptoms. So**  
 6 **they might not have had a lot of exposure to heat**  
 7 **stroke. If somebody is -- has experience, you**  
 8 **learn about heat stroke as -- in medical school and**  
 9 **maybe residency. But if you don't see it all the**  
 10 **time, you might not think of it.**  
 11 **Q.** Now you are rendering an opinion that  
 12 these doctors may not be qualified to treat and  
 13 diagnose heat illnesses?  
 14 **A. Just a possibility.**  
 15 **Q.** Based on what, Doctor?  
 16 **A. I don't know them. I can't make that**  
 17 **judgment.**  
 18 **Q.** So don't you think, then, rather than  
 19 making a possible judgment, you should not make a  
 20 judgment at all?  
 21 **A. I made a judgment as to why, what my**  
 22 **thought was for the cause of death based on**  
 23 **everything. Now, there are things that point to**  
 24 **one direction and the things that point to another**  
 25 **direction. Unfortunately, like I said, nothing is**

1 **100 percent in medicine. I wish it was. It would**  
 2 **make my life a lot easier.**  
 3 **But you have to take the majority of the**  
 4 **information and see where it's going. There are**  
 5 **going to be outliers. But you got to take the big**  
 6 **picture. And the big picture does show heat**  
 7 **stroke.**  
 8 **Q.** You said a moment ago that it's a  
 9 possibility that Dr. Neff and Dr. Kennedy -- both  
 10 doctors who you've not met; right? Do you know  
 11 anything about their credentials?  
 12 **A. Nothing.**  
 13 **Q.** Do you know whether Dr. Neff actually  
 14 received the 2009 Physician of the Year Award at  
 15 Flagstaff Medical Center?  
 16 **A. Don't know.**  
 17 **Q.** Okay. So you really have no basis to  
 18 tell this jury or to question in front of this jury  
 19 the qualifications or credentials of these doctors;  
 20 right?  
 21 **A. I'm not questioning their qualifications**  
 22 **or credentials.**  
 23 **Q.** So you mentioned earlier that there are  
 24 certain signs and symptoms that you would see in  
 25 the toxidrome for cholinergic toxicity; correct?

1 **A. Correct.**  
 2 **Q.** And it was SLUDGE?  
 3 **A. And the other one is DUMBBELLS.**  
 4 **Q.** We'll get there. SLUDGE. Do you know  
 5 whether it's SLUDGEM?  
 6 **A. There is lots of different mnemonics.**  
 7 **Q.** Can you tell me what the "S" stands for.  
 8 **A. Salivation.**  
 9 **Q.** And "L"?  
 10 **A. Lacrimation.**  
 11 **Q.** And lacrimation is what, Doctor?  
 12 **A. Tearing.**  
 13 **Q.** Excessive tearing; right?  
 14 **A. Well, when you're lacrimating at all,**  
 15 **it's tearing.**  
 16 **Q.** Well, I think you I heard you explain  
 17 earlier -- maybe I didn't -- that the reason why  
 18 you have SLUDGEM is because organophosphates, the  
 19 compound, inhibits a particular enzyme. Correct?  
 20 **A. Correct.**  
 21 **Q.** It results in overstimulation of certain  
 22 receptors; right?  
 23 **A. Correct.**  
 24 **Q.** And the overstimulation of those  
 25 receptors results in excessive production of

- 1 certain byproducts; correct?
- 2 **A. Correct.**
- 3 **Q.** One of them would be excessive
- 4 salivation?
- 5 **A. Correct.**
- 6 **Q.** Another would be excessive lacrimation,
- 7 excessive tearing; right?
- 8 **A. I guess we're splitting hairs. The**
- 9 **definition of "lacrimation" is just tearing. But**
- 10 **in the setting of poisoning, you will have**
- 11 **excessive lacrimation.**
- 12 **Q.** Excessive tearing?
- 13 **A. Correct.**
- 14 **Q.** What does the "U" stand for?
- 15 **A. Urination.**
- 16 **Q.** You think it's urination?
- 17 **A. Yes.**
- 18 **Q.** Okay. What does the "D" stand for?
- 19 **A. Defecation.**
- 20 **Q.** Not diaphoresis?
- 21 **A. You know, that's the thing with**
- 22 **mnemonics. You can adjust them to your need.**
- 23 **Q.** Is defecation and diaphoresis the same
- 24 thing?
- 25 **A. Defecation and diaphoresis are not the**

- 1 **same thing.**
- 2 **Q.** Right. What's diaphoresis?
- 3 **A. Sweating.**
- 4 **Q.** And I might have misspelled this again.
- 5 Is that how you spell diaphoresis?
- 6 **A. I think it's d-i-a.**
- 7 **Q.** Thank you. What's "G"?
- 8 **A. GI upset.**
- 9 **Q.** Gastrointestinal?
- 10 **A. Correct.**
- 11 **Q.** So wouldn't defecation fall under GI
- 12 upset and "D" stands for diaphoresis?
- 13 **A. Could be. Again --**
- 14 **Q.** If you know.
- 15 **A. -- this is the one I use.**
- 16 **Q.** What does "E" stand for?
- 17 **A. Emesis.**
- 18 **Q.** Emesis is?
- 19 **A. Vomiting.**
- 20 **Q.** And the "M" stands for?
- 21 **A. I'm assuming it's miosis.**
- 22 **Q.** Do you know? I don't --
- 23 **A. Well, I don't use SLUDGE. DUMBBELLS is**
- 24 **where they put the miosis in there.**
- 25 **Q.** Okay. Well, we'll do DUMBBELLS. But

- 1 Dr. Mosley talked to the jury about SLUDGE. What
- 2 does the "M" stand for?
- 3 **A. I only use SLUDGE. So I don't know what**
- 4 **he used it for.**
- 5 **Q.** Okay. Any dispute that it's miosis?
- 6 **A. Could be.**
- 7 **Q.** Which is pinpoint pupils; right?
- 8 **A. Correct.**
- 9 **Q.** Now, you understand -- right? -- that the
- 10 presentation of any one of these signs and symptoms
- 11 will differ depending on certain variables; right?
- 12 **A. Say it again.**
- 13 **Q.** Meaning, for example, the signs and
- 14 symptoms that we see in SLUDGE, whether one or all
- 15 or two or more are present depends on, for example,
- 16 the actual compound; right?
- 17 **A. Okay.**
- 18 **Q.** Do you know that?
- 19 **A. Yes.**
- 20 **Q.** Organophosphate compound. How many are
- 21 there out there?
- 22 **A. Lots and lots. I couldn't tell you the**
- 23 **number.**
- 24 **Q.** Any estimate?
- 25 **A. No. No idea.**

- 1 **Q.** Okay. You didn't look that up in any of
- 2 your --
- 3 **A. No.**
- 4 **Q.** Okay. So --
- 5 **A. There is a list of toxic ones. And I**
- 6 **gave you that article from eMedicine.**
- 7 **Q.** From eMedicine?
- 8 **A. Correct.**
- 9 **Q.** It depends on the compound. And there
- 10 are lots of them out there. It also depends on the
- 11 dosage; right?
- 12 **A. Correct.**
- 13 **Q.** It also depends on the route of exposure,
- 14 right?
- 15 **A. Correct.**
- 16 **Q.** So depending on whether it's inhaled,
- 17 ingested, or absorbed through the skin, dermal;
- 18 right?
- 19 **A. Correct.**
- 20 **Q.** And it also depends on the individuals,
- 21 perhaps their individual metabolism; right?
- 22 **A. Their individual metabolism, like**
- 23 **children versus adults. Yes.**
- 24 **Q.** Okay. And all those factors, depending
- 25 on what you have present, can determine whether or

1 not somebody who suffers from organophosphate  
2 toxicity might have salivation and emesis and  
3 miosis but not lacrimation; right?

4 **A. I guess. Yes.**

5 **Q. Do you know that?**

6 **A. The problem with -- one of the things**  
7 **that -- the end all, be all, of organophosphates,**  
8 **why they're a problem, if I'm crying, it doesn't**  
9 **really affect my health. If I'm vomiting, to a**  
10 **certain degree. It's not such a bad deal.**  
11 **Defecation. I'm pooping. It's not going to kill**  
12 **me.**

13 **The problem with organophosphates is the**  
14 **salivation. And what happens is is they get so**  
15 **much saliva that it gets down into their lungs,**  
16 **ends up causing -- they can't exchange oxygen and**  
17 **they can't breathe. So that's the big problem with**  
18 **organophosphates is ultimately you can't breathe.**  
19 **And the treatment is based on addressing those**  
20 **problems.**

21 **Organophosphates can do these things.**  
22 **They also can do other things based on the**  
23 **receptors they get. It's back to a little**  
24 **pathophys. You can have two types of receptors**  
25 **that the organophosphates can work on. The other**

1 kind are -- there's the nicotinic and muscarinic.

2 **And not to bore you here, but the other**  
3 **signs and symptoms can be where they can get**  
4 **confused. They can have convulsions. If it hits**  
5 **those receptors, it can make big pupils. It**  
6 **depends on which receptor it hits.**

7 **But ultimately the part of**  
8 **organophosphates that you worry about is if they**  
9 **get too much fluid in their lungs, they can't**  
10 **breathe, they don't have enough oxygen, they die.**  
11 **That's the concern of organophosphates.**

12 **Q. Okay. I understand that. But my**  
13 **question is -- you raised something that I wanted**  
14 **to ask you about. If you have the compound binding**  
15 **and activating on a muscarinic receptor, what do**  
16 **you see in the heart rate?**

17 **A. Well, that's a good question. Generally**  
18 **you can go -- you can get bradycardia or**  
19 **tachycardia. But generally the classic one for --**  
20 **the DUMBBELLS is the other mnemonic. And that's**  
21 **bradycardia. But if you get the muscarinic**  
22 **receptors, you can get tachycardia. So**  
23 **unfortunately it's not a -- again, it's not an easy**  
24 **one. You've got to look at both sides.**

25 **Q. So if it activates the muscarinic, what**

1 are you saying? It's bradycardia or tachycardia?

2 **A. You can have tachycardia with it.**

3 **Q. And so then if it activates nicotinic,**  
4 **you're saying it's bradycardia?**

5 **A. Again, in general. But it's not**  
6 **100 percent.**

7 **Q. Are you certain of that?**

8 **A. Yes. That's what DUMBBELLS stands for.**

9 **Q. All right. We'll get back to that. My**  
10 **question is -- the question I asked you before we**  
11 **went into that was simply -- and we can refer to**  
12 **Goldfrank's, which I'll give you Exhibit 1008.**

13 **Do you have the other article? Do you**  
14 **have a copy?**

15 **Well, let's do this so we don't waste**  
16 **time. You do see here in this article specifically**  
17 **about insecticides, organophosphate compounds, and**  
18 **carbonates under clinical manifestations. The**  
19 **onset of symptoms varies according to the**  
20 **compounds, route and degree of exposure; right?**

21 **A. Yes.**

22 **Q. And what that means is that depending on**  
23 **any one of those three factors, a patient exposed**  
24 **to organophosphates may show miosis and salivation,**  
25 **but not GI upset; right?**

1 **A. That's not what this says. It says, the**  
2 **onset of symptoms. So that means when the onset of**  
3 **the symptoms -- it doesn't say the different**  
4 **system. It just says, the onset. So how quickly**  
5 **do you become symptomatic? And that's based on if**  
6 **you drink a gallon of it or if you drink a little**  
7 **bit. So it's not saying that in this article.**  
8 **It's saying the onset.**

9 **Q. Let me show you another so that we -- you**  
10 **think "onset" means the time of when it presents;**  
11 **right?**

12 **A. That's what onset means.**

13 **Q. As opposed to which one becomes present?**

14 **A. Correct.**

15 **Q. Let me show you --**

16 **A. That's what this article says.**

17 **Q. Okay. I understand. This is**

18 Occupational Medicine, Human Health Effects of  
19 Pesticides; right?

20 **A. Okay.**

21 **Q. No reason to believe that this is not a**  
22 **reliable literature?**

23 **A. No reason at all.**

24 **Q. And you see here that it says, because of**  
25 **the nature of the presenting symptoms depends**



1 somewhat on the route of absorption, some  
2 anticipated symptoms or signs may be more or less  
3 predominant than others; right?

4 MR. HUGHES: Your Honor, may we have the  
5 document that Ms. Do just read from marked for  
6 purposes of the record?

7 THE COURT: Yes. We will do that. It's 1015,  
8 which will be marked.

9 MS. DO: Thank you, Your Honor.

10 Q. Did I read that right?

11 A. **Well, I'm trying to read the whole thing.**  
12 **It talks about -- it says, although the symptoms of**  
13 **acute intoxication are relatively straightforward,**  
14 **the actual diagnosis is much more difficult than**  
15 **may be expected.**

16 **It says, the relative toxicity and**  
17 **potential for absorption across skin compared to**  
18 **other routes may be especially -- may be an**  
19 **especially confounding factor. Because the nature**  
20 **of the presenting symptoms depends somewhat on the**  
21 **route of absorption, some anticipated symptoms or**  
22 **signs may be more or less predominant. A delay in**  
23 **absorption may occur --**

24 Q. Doctor, let me just stop you there. I'll  
25 be more than happy to give you a copy of this at

1 the end of day.

2 But the question I have in front of the  
3 jury is, depending on those factors -- route of  
4 absorption, compound and the dosage -- some signs  
5 and symptoms may be more dominant than others;  
6 correct?

7 A. **Some. Yes. That's what this says.**

8 Q. Now, you read in here something about  
9 absorption through skin may be a little bit more  
10 confounding. Was that what you read?

11 A. **I'll have to read it again. I'm sorry.**

12 Q. Well, let me just ask you this: You do  
13 know that, as we talked about earlier, heat and  
14 humidity -- if somebody is sweaty and hot, their  
15 skin is going to make them more vulnerable to  
16 absorption of any kind of toxins; right?

17 A. **It can.**

18 Q. Okay. Now, you told Mr. Hughes that you  
19 didn't see any evidence of excessive salivation in  
20 this case; is that right?

21 A. **Well, that's a good question. There are**  
22 **a couple cases where, I guess -- actually, it might**  
23 **have been Stephen Ray -- the paramedic thought he**  
24 **saw salivation. He actually said he saw excessive**  
25 **salivation. But then when he went to actually**

1 **examine the patient, he said it was vomit. And**  
2 **then when he got to the hospital, his mucus**  
3 **membranes, which means your mouth, was dry.**

4 **So there is a question. You have to look**  
5 **at the whole picture as to what did they really**  
6 **see. So I'll have to look at my records, but I**  
7 **think it was Stephen Ray.**

8 Q. Let's take a look. It's Exhibit 213.

9 You have that in front of you. You said earlier  
10 that you didn't see any evidence, for example, of  
11 tearing; right?

12 A. **I don't think I said that. Did I?**

13 Q. I'm asking you. Did you tell Mr. Hughes  
14 under direct examination that you would expect to  
15 see tearing if people were suffering from  
16 organophosphates, and you saw no evidence of that?

17 A. **Well, I think I would see the big picture**  
18 **of tearing --**

19 Q. My question, Dr. Dickson, I'm sorry, is,  
20 did you tell Mr. Hughes that?

21 A. **I don't know if I said those exact words.**

22 Q. Okay. Then the next question I think you  
23 were trying to answer is, did you see evidence of  
24 that?

25 A. **Did I see evidence of tearing?**

1 Q. Yes.

2 A. **Well, I think it was Mr. Ray.**

3 Q. Let's take a look at Bates stamp 6997,  
4 which is the EMT records.

5 A. **Yep.**

6 Q. Okay. And you do see, patient had both  
7 eyes open with tears? Right?

8 A. **Where are we at? I'm sorry. Initial**  
9 **physical exam.**

10 MR. HUGHES: Just for the record, can you give  
11 us an exhibit number?

12 MS. DO: Yes. It's Exhibit 213, Bates stamp  
13 6997.

14 Q. Okay. So we're looking at the same thing  
15 up here; right?

16 A. **I guess I'm looking -- yes. I see that.**

17 Q. Stephen Ray, who Dr. Neff, Dr. Kennedy,  
18 seeing him on two separate dates, said, patient did  
19 not appear to have heat stroke. That same patient  
20 seen by the EMS, the first responders noted both  
21 eyes open with tears; right?

22 A. **Correct.**

23 Q. That's evidence of lacrimation; right?

24 A. **Correct.**

25 Q. Now, you told the jury earlier that --

1 you first, I think, said you would not expect to  
2 see frothy sputum. What you would expect to see is  
3 drooling.

4 Do you remember that?

5 **A. Correct.**

6 **Q.** And then before we took the last break,  
7 you said, actually you can see frothy sputum in  
8 organophosphate toxicity; right?

9 **A. I said, pulmonary edema causes frothy,**  
10 **pink sputum. You can get pulmonary edema from**  
11 **organophosphate poisoning. If your lungs aren't**  
12 **doing well and they start to leak that fluid, you**  
13 **can get it. It's a late-stage finding.**

14 **Q.** Late-stage finding in organophosphates?

15 **A. And in heat illness.**

16 **Q.** Late-stage finding in both?

17 **A. Correct.**

18 **Q.** You're certain of that?

19 **A. I'm certain of that.**

20 **Q.** Do you know what frank pulmonary edema  
21 is?

22 **A. That's the pink, frothy sputum. Because**  
23 **now if you've got so much --**

24 **Q.** Let me get an answer to this. What is  
25 frank pulmonary edema?

1 **A. Pink frothy sputum coming out your mouth**  
2 **is a sign of frank pulmonary edema.**

3 **Q.** What is frank pulmonary edema? I  
4 understand you're telling the jury what you would  
5 expect to see if there was frank pulmonary edema.  
6 My question is, what is --

7 **A. It's obvious. Frank pulmonary edema**  
8 **means it's very obvious. So --**

9 **Q.** Anything else?

10 **A. What's that?**

11 **Q.** Anything else that frank pulmonary edema  
12 means?

13 **A. That's what it means.**

14 **Q.** If Dr. Mosley testified to this jury that  
15 frank pulmonary edema means immediate onset of  
16 pulmonary edema as opposed to late-stage pulmonary  
17 edema, do you agree or disagree that?

18 **A. No. He's talking about flash pulmonary**  
19 **edema. That's different than frank.**

20 **Q.** So you're saying Dr. Mosley is wrong?

21 THE COURT: I'm sorry, Ms. Do. We have to  
22 recess at 5:00, and we're a couple minutes past  
23 that now.

24 Ladies and gentlemen, we'll take the  
25 recess. Remember the admonition, of course. Be

1 assembled at the normal time, at 9:15.

2 Dr. Dickson, recall that rule of

3 exclusion that I discussed with you earlier.

4 That's in effect.

5 We are in recess. Thank you.

6 (The proceedings concluded.)

1 STATE OF ARIZONA )  
2 COUNTY OF YAVAPAI ) ss: REPORTER'S CERTIFICATE

3  
4 I, Mina G. Hunt, do hereby certify that I  
5 am a Certified Reporter within the State of Arizona  
6 and Certified Shorthand Reporter in California.

7 I further certify that these proceedings  
8 were taken in shorthand by me at the time and place  
9 herein set forth, and were thereafter reduced to  
10 typewritten form, and that the foregoing  
11 constitutes a true and correct transcript.

12 I further certify that I am not related  
13 to, employed by, nor of counsel for any of the  
14 parties or attorneys herein, nor otherwise  
15 interested in the result of the within action.

16 In witness whereof, I have affixed my  
17 signature this 22nd day of May, 2011.

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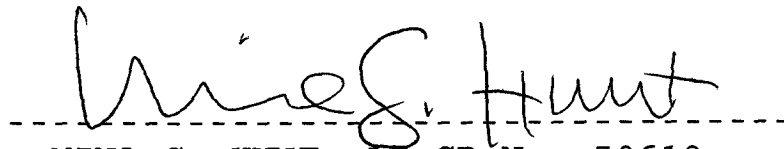
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